15 CENTS A COPY

THE OIL WEEKLY

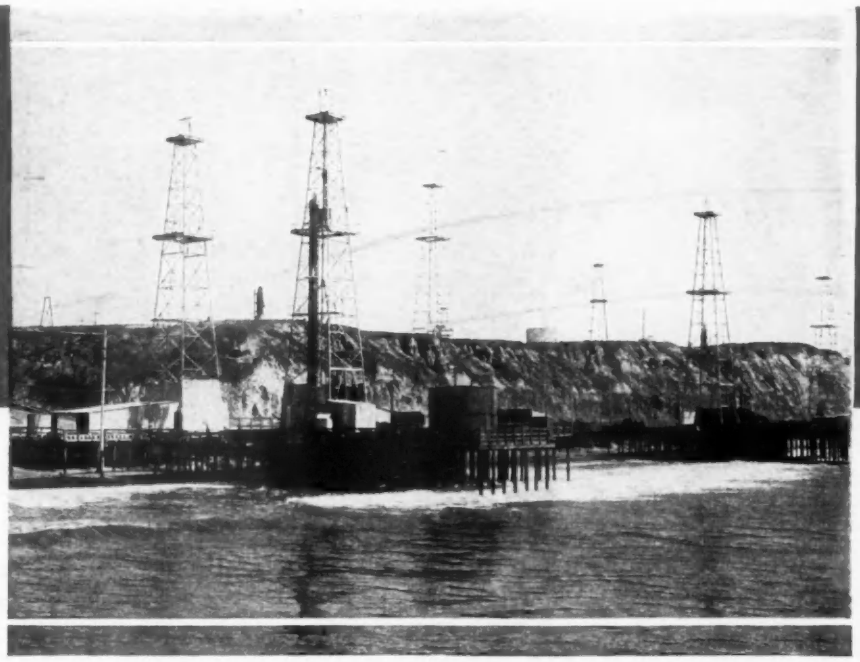
OIL & GAS ENGINEERING

News Statistics

IDECO EQUIPMENT
FOR THE OIL INDUSTRY

Steel Derricks . . Machinery Supports . . Standard Ends . . Rotary Machinery . . Crown Blocks . . Wheels . . Walking Beams and Pitmans . . Portable Drilling Rigs . . Rig Irons . . Rotary Drilling Tools . . Cable Drilling and Fishing Tools . . Pumping Units . . Chain . . Standard Buildings and other equipment.

The efficiency and many economies obtained thru the use of IDECO Products have been responsible for their wide use throughout the oil fields of the world.



Ideco Oil Well Equipment Division of

INTERNATIONAL-STACEY CORPORATION

COLUMBUS, OHIO BEAUMONT, TEXAS LOS ANGELES, CALIF.

New York Pittsburgh Cincinnati Chicago Connersville Wichita
Tulsa Ft. Worth Houston Shreveport Denver
San Francisco Buenos Aires, Argentine Maracaibo, Venezuela

Branches and stocks in every important oil field.

June 5, 1931

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THE SAFETY LOCK

MODEL "M" ROCK BIT

The cones of the Model "M" Rock Bit are locked to the bushings without the use of a single thread.

An alloy steel rod, inserted while hot and cooled in oil, holds the cone and its bushing together as firmly as though the two were in one piece. There are no screwed-in retaining rings or welded parts to suffer from drilling shocks and strains.

The result is added safety—eliminating the possibility of losing cones in the hole.

Of the thousands of sets of Model "M" Cones used throughout the world, not one ever has been left in the hole.

That is a big feature in a rock bit, and an exclusive Model "M" feature. Bulletin No. 12-A contains complete information and data. Send for a copy now.

GLOBE OIL TOOLS CO.

LOS NIETOS, CALIFORNIA

Successors to

H. C. Smith Manufacturing Co., Inc. Wieman-Kammerer-Wright Co., Inc. National Tool & Metals, Inc.

Branches:

Ventura, Calif. Bakersfield, Calif. Kettleman Hills, Calif. Taft, Calif. Hobbs, New Mexico Oklahoma City, Okla. Longview, Texas

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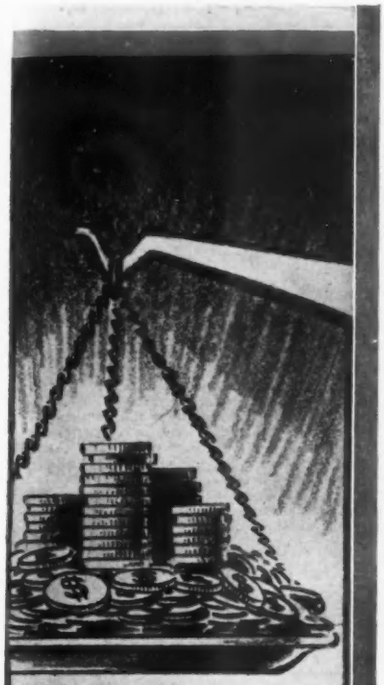


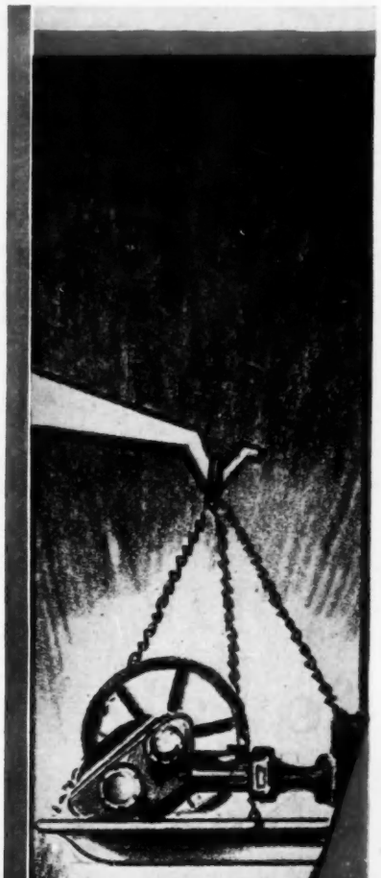
Gaso Pumps are offered on the basis of VALUE —NOT PRICE

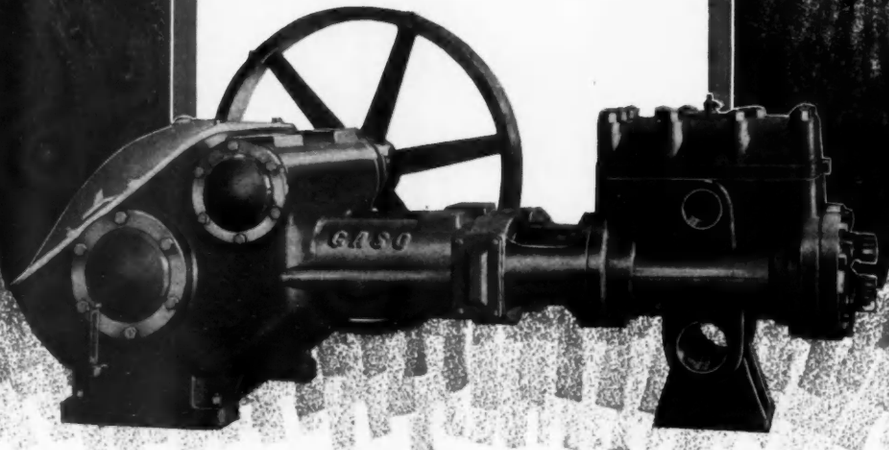
It is impossible to judge the value of pumps by price alone. You must also take into consideration the quality of design and construction that determines operating and upkeep costs . . . To those who select pumps on the basis of maximum service per dollar, we confidently offer the GASO line of truly economical oil industry pumps.

GASO PUMP & BURNER MFG. CO. - - Tulsa, Okla.

Export Office: New York, N. Y.

Shown below is GASO Timken Bearing Enclosed Power Pump, Fig. 1508. Interchangeable liners give capacities ranging from 63 bbls. per hour at 800 lbs. working pressure to 250 bbls. per hour at 250 lbs. pressure. Arranged for any type of drive desired





GASO PUMPS

FOR EVERY OIL INDUSTRY NEED

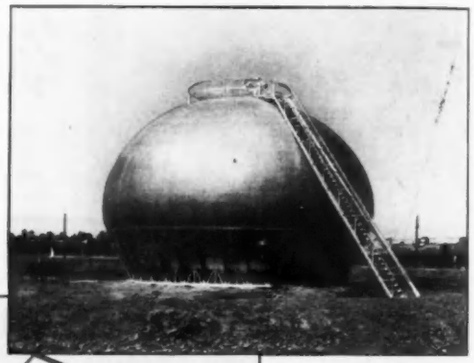
STORAGE TANKS

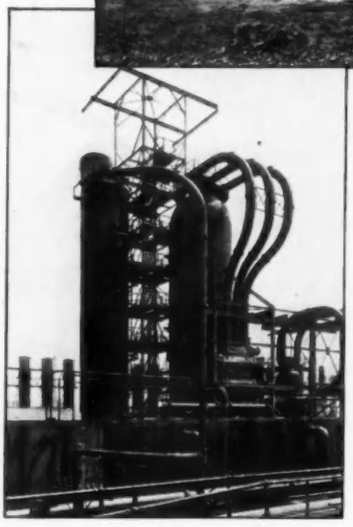
We can furnish field erected tanks in all capacities from 500 bbls. up—built to our standard designs, A.P.I. specifications, or to customers special designs; equipped with ordinary roofs or Wiggins Roofs. Cylindrical tanks in both welded and riveted construction are supplied from our Birmingham and Bridgeburg, Ont., plants. Horton elevated tanks for water service to refineries, oil field towns, pipe line stations, etc., are made in capacities from 5,000 gallons up.

WIGGINS ROOFS

By stopping evaporation losses and eliminating fire hazards, Wiggins Roofs repay their cost in a few months. Floating Roofs for new or existing working tanks ride on the surface of the oil at all levels, stopping emptying and filling loss. Breather Roofs for standing storage tanks flex up and down to provide for thermal expansion without venting off vapors.

A DEPENDABLE Source for all your Tank and Plate Work Requirements





THE wide range of Horton products enables you to buy your tank and plate work requirements from a single, reliable source with resulting savings in time and money. You save by having tanks and oil field plate work built at one time, on one contract.

Horton products are preferred by producers, refiners and pipe line companies all over the world for these reasons: their design and construction are the result of long experience in oil field problems . . . they are backed by a consistent record of satisfied users . . . four fabricating plants permit prompt delivery . . . our own erection crews are available anywhere.

Our nearest office will be glad to supply information and quotations on your plate work requirements.

PRESSURE TANKS

Hortonspheroids, built for 10 to 15 lbs. pressure, are supplied in capacities of 2,500, 5,000, 10,000 and 20,000 bbls. for volatile products; Hortonspheres, for pressures of 25 lbs. and over, in 5,000, 7,500 and 10,000 bbl. capacities.

REFINERY PLATE WORK

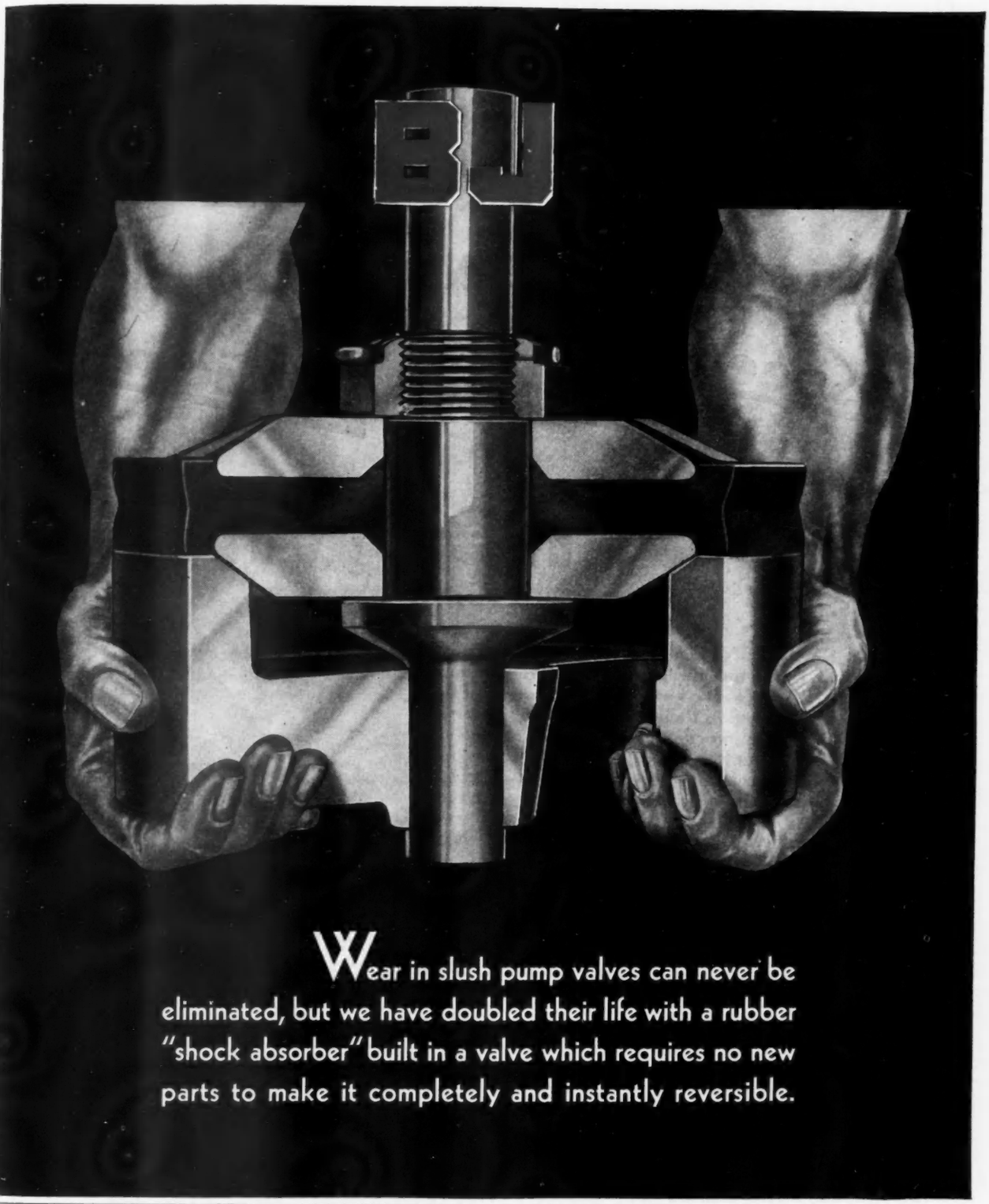
We also build all kinds of refinery plate work, including absorbers, agitators, crude stills, condenser boxes, bubble towers, smoke stacks, gas holders, etc.

CHICAGO BRIDGE & IRON WORKS

Dallas	1238 Burt Bldg.	New York	3144 Hudson Terminal Bldg.
Houston	1120 Electric Bldg.	Philadelphia	2613-1616 Walnut St., Bg.
Tulsa	2405 Exchange Bank Bldg.	Boston	1518 Consolidated Gas Bldg.
Birmingham	1538 Fiftieth St., N.	San Francisco	1050 Rialto Bldg.
Chicago	2142 Old Colony Bldg.	Seattle	4322 Smith Tower
Detroit	1515 Lafayette Bldg.	Los Angeles	1324 Subway Terminal Bg.
Cleveland	2241 Midland Bank Bldg.	Havana, Cuba	Apartado 2507

HORTON PRODUCTS

OW 6-5 Gray



Wear in slush pump valves can never be eliminated, but we have doubled their life with a rubber "shock absorber" built in a valve which requires no new parts to make it completely and instantly reversible.

BYRON JACKSON CO.

Established 1872

General Offices: 2150 EAST SLAUSON AVENUE, LOS ANGELES, CALIFORNIA

Mid-Continent Office:
215 East Archer Street, Tulsa, Oklahoma

Export Office:
1258 Graybar Building, New York, N.Y.

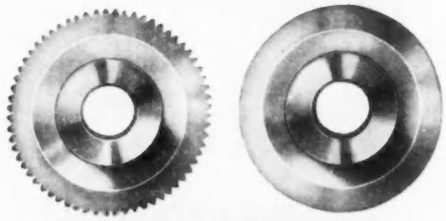
TRICROME

MEANS

New Speed — New Ease — New Economy

in

Pipe Cutter Wheels



THE SENSATIONAL new Silvered Wheel with the red hub, is now on sale at your oil well supply house. TRICROME Wheels are new—from the design of their keener cutting edge to their self-lubricating silver and red finish. They work easier, cut faster and last longer than any cutter wheel ever before developed. TRICROME Wheels now in use have cut over 1000 pieces of pipe and are still sharp and ready for more.

SEE THEM — TRY THEM

Look for the TRICROME Sample Board showing knurled and plain edge Cutter wheels to fit TRIMO, Barnes and Saunders type cutters. This display identifies your supply house as a distributor of TRICROME Wheels and permits you to examine the *new*, keener cutting edge which throws practically no burr inside the pipe.

Renew your TRIMO, Barnes and Saunders type cutters *today* with new TRICROME Silvered Wheels and notice the difference. Once around the pipe to track — twice more to cut — and the job is done.

THERE IS NOTHING BETTER THAN A "TRICROME" AT ANY PRICE— YET THEY COST NO MORE THAN ORDINARY WHEELS

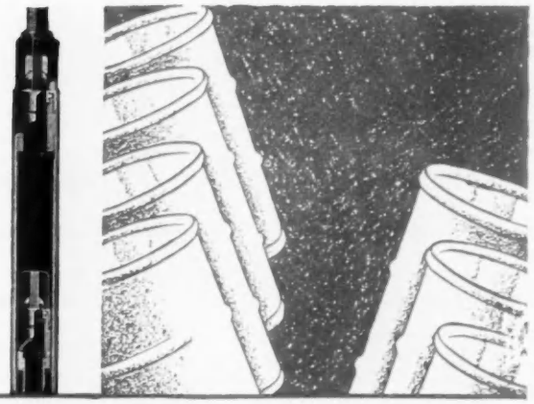
the new TRICROME *cutter wheel*
"the silvered wheel with the red hub"

A product of Trimont Mfg. Co., Roxbury (Boston), Mass.

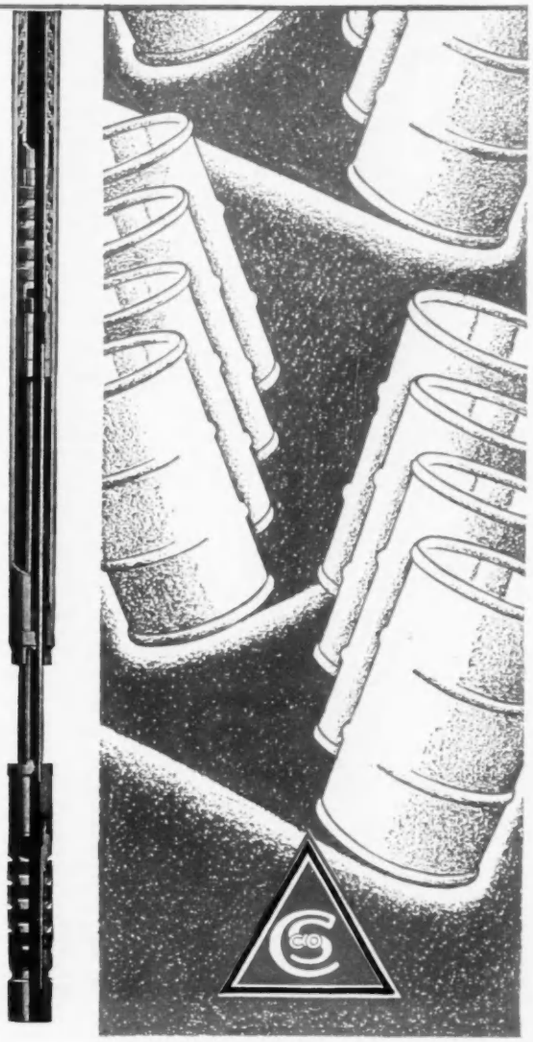
Makers of TRIMO TOOLS for more profitable pipe work

D+B

INVERTED TYPE PUMPS



...MORE BARRELS PER DAY



For over two years D + B Inverted Type Pumps have set an enviable record of increased production and satisfactory performance. Reports show that remarkable success has been obtained in wells which range from 5000 to 7800 feet. Production records indicate in many cases the 2½" pump is handling 500 barrels of dead fluid per day and in territories where adverse pumping conditions are encountered the D + B Inverted Type Pump has proved far superior and is the only cup pump to give entire satisfaction.

The pump goes in or comes out with the rods thus saving a tubing job when making an installation or changing pumps and requiring minimum maintenance expense, thereby materially reducing production costs. Either the Simplex Lock Assembly hold down or a 4 cup hold down with adapter bushing can be used to lock the pump into its working position.

It is necessary on the first installation when using the Simplex Lock Assembly to pull tubing; however, with the 4 cup hold down with adapter bushing, it is possible for the pump to be installed on the top of a common working barrel or any make of working barrel now on the market. Special bushings can be furnished for any other type locking device.

The Inverted Principle eliminates the sand preventer used in other type pumps thereby requiring less parts throughout the pump. The cups are evenly expanded at all times by the entire pressure of the fluid in the traveling tube. The oil is allowed to pass from the outside of the traveling tube up through the guide nut at the bottom of the tube and up to the cups. This also assures the operator of small wells that the cups are always lubricated even though the well should pump off. On the longer pumps for deeper wells, double valves are recommended both in the traveling and standing valves which can be furnished at slight additional cost.

"If Continental Sells It....There Is No Better"

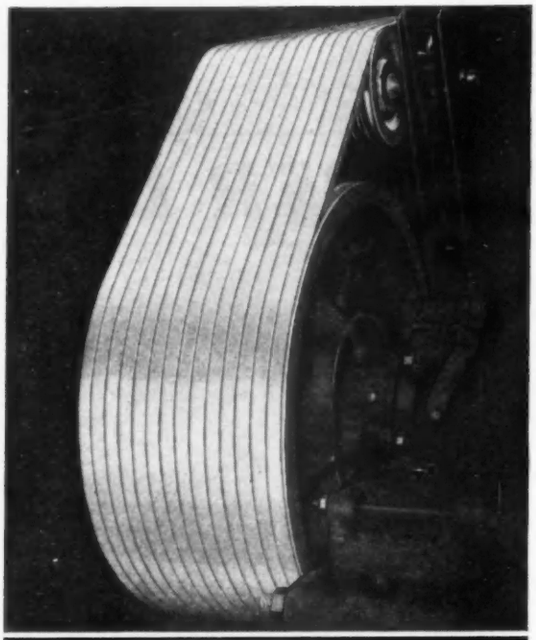
THE CONTINENTAL SUPPLY COMPANY

General Offices: ST. LOUIS
THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada
Export Offices: CONTINENTAL EMSCO CO., INC.
74 Trinity Pl., New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2
CONTINENTAL EMSCO S. A. R.
7, Strada Eminescu, Ploesti, Romania

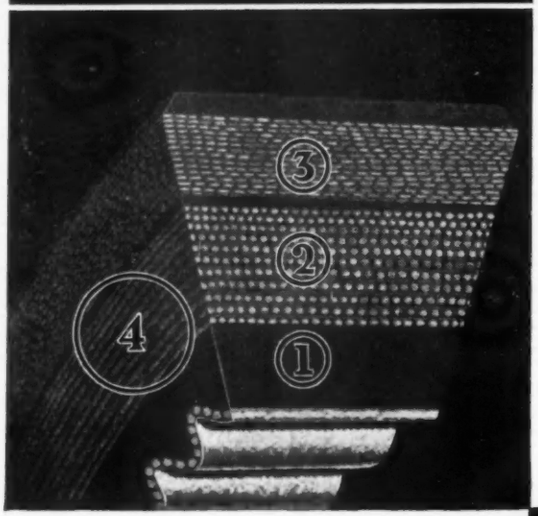
OW-6-5-Gray CDB-2

CONTINENTAL

Are you losing money



COMPLETE DRIVES—PULLEYS AND BELTS—
IN STOCK. ALL RATIOS, 2 H. P. TO 100 H. P.



BECAUSE OF POWER TRANSMISSION TROUBLES?

Every time you stop your machinery because of belt troubles, you're losing money. Every time any unit falls down in smoothness of performance or in quality of output because of faulty speeds, vibration or breakdowns, you're losing money. Every time you waste labor, time and expense on the upkeep and repair of old-fashioned drives, you're losing money. And it's rightfully *yours* . . . it's money you've really earned . . . money you could easily save . . . easily keep for yourself. Yet you're losing it . . . all because you can't keep your machinery running *smoothly* and *dependably*.

You Need Dayton Cog-Belt Drives

Daytons are dependable, care-free . economical. They deliver the maximum amount of power, smoothly controlled, to driven machinery. And because Dayton Cog-Belts last so much longer . . . without expensive upkeep . . . without dressing . . . without dust-catching oil or grease, they pay for themselves many times over in just a short time. And they save space.

Investigate for yourself. Ask for a Dayton Cog-Belt catalog and a sample section of the belt. Write today.

THE DAYTON RUBBER MANUFACTURING COMPANY
DAYTON, OHIO

Factory Distributors in principal cities and all Westinghouse Electric & Mfg. Co. Sales Offices

1 Cog Section . . . permits high speeds around small-diameter pulleys, without heating, internal friction, bulging, rippling or crawling. Daytons are "built to bend."

2 "Neutral Axis" . . . the strength section permanently pre-stretched while kept under tremendous tension in the vulcanizing chamber. This process is patented.

3 Outer Section . . . for balance. Built up of bias-cut fabric so laid that when the belt is die-cut, the end-grain comes flush with the side walls. Assures firmer grip . . . makes positive speed control possible.

4 Entire belt die-cut . . . for precision. Daytons are accurate and *stay* accurate. They do not squash, buckle or turn over in the pulley grooves.

Dayton
COG-BELT DRIVES

J&L

REJECTIONS ARE MADE IN THE MILL . . . NOT IN THE FIELD

USERS don't have to look for defects in J & L Seamless Pipe. J & L inspectors find them first.

The inside of pipe is even easier to inspect than the outside. Under the beams of the inspector's lamp, any defects are exaggerated, just as the beams from a car's headlights magnify small bumps and depressions in a road. Pits, seams and scores that might weaken the wall and give corrosion a foot-hold, are instantly seen, and the defective pipe is rejected.

CASING DRILL PIPE · TUBING LINE PIPE · J&L PIPE · SEAMLESS · WELDED

Constant critical inspection is the rule in J & L Seamless manufacture. Five out of every six men in the department make the pipe—the sixth man inspects it. He looks for trouble and flaws so you won't have to, makes rejections in the mill so you won't have to make them in the field. He works for you as though he were on your pay roll, assuring you that the J & L Seamless you receive will be of uniform quality and give you dependable service and long-time satisfaction.

JONES & LAUGHLIN STEEL CORPORATION

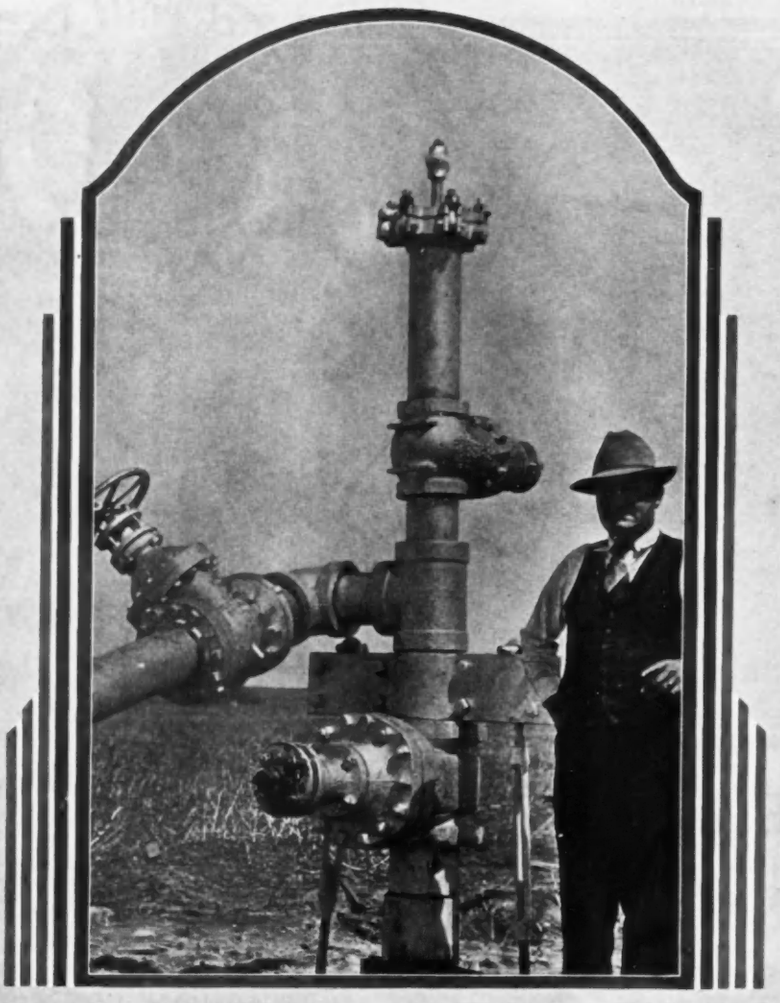
AMERICAN IRON AND STEEL WORKS

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products

J&L STEEL



A 96,000,000 foot Gas Well in Texas. JARECKI equipment includes Fig. 1004A, Master Gate Valve.

JARECKI
Valves and Fittings

You buy Valves and Fittings to carry out a specific purpose. Their value depends (1) on the efficiency with which they fullfill their duties, and (2) the length of service that they render. . . . . When you insist on JARECKI Valves and Fittings you are sure of maximum value because, like other oil men, you know that the JARECKI trademark is a symbol of dependability. This mark stands not only for modern shops, equipment and methods, but for old fashioned standards of ruggedness and extra safety. To be sure yours are JARECKI Valves and Fittings is such a simple way to be certain of satisfaction. . . . . Our nearest store awaits your call.

Jarecki
MANUFACTURING COMPANY

General Office—St. Louis, Mo. Home Office and Factory—Erie, Pa., U. S. A.

Branch Stores at all important places in the Oil Country.

District Offices { Pittsburgh, Pa.; El Dorado, Kan.; Tulsa, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

Years in advance

With the split liner and other improved patented features, contractors everywhere claim that the PERFECTION Core Barrel is years in advance of any other coring device. The split liner permits you to *always* remove the core quickly, clean and whole every time.

TYPE "M" BIT BODY

Type M Bit Body and Cutter Head puts water circulation direct on the cutting edge, allowing you to cut a clean core quickly in the hardest sands. Patented design, highly skilled workmanship, modern equipment and the finest materials money can buy give the PERFECTION Core Barrel its name.

TYPE "M" CUTTER HEAD

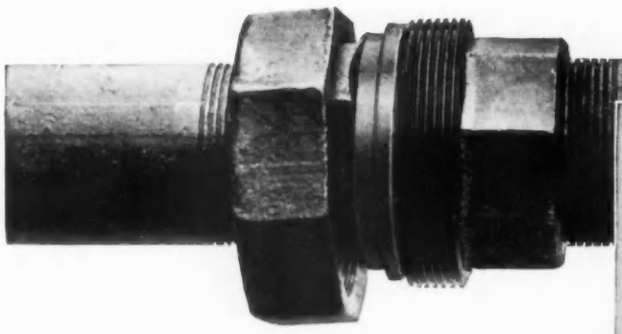
TYPE "C"

Your Supply House Carries All Brewster A. P. I. Products

Type M Bit Body and Type M Cutter Head are shipped as standard equipment with the PERFECTION Core Barrel pictured here showing the Type C Bit Body and Head.

The Brewster COMPANY~INC.
Shreveport,Louisiana

Warehouses: The Iverson Specialty Co., Oklahoma City, Oklahoma, Phone 2-2833; The Brewster Houston Store, 2000 Harrington S.reet, Capitol 2031.



Easily Disconnected . . . a KEWANEE Union

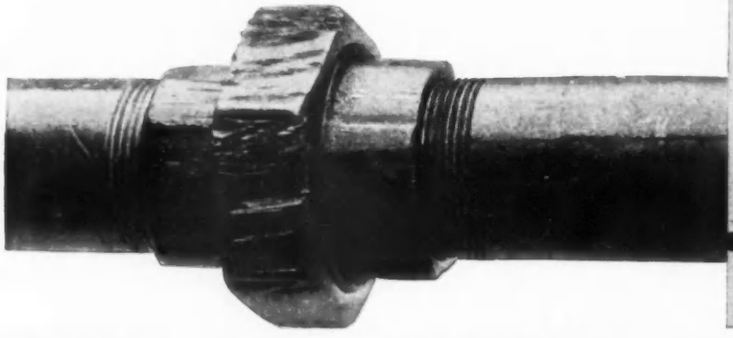
The Kewanee Union, *bronze-to-steel*, cannot corrode

Not even a cold chisel could start the "frozen" threads of the corroded iron-to-iron union shown at the bottom of the page.

But your Kewanee Unions with forged steel to forged bronze thread connection, can be disconnected easily, instantly, any time, with the turn of a wrench. Steel to bronze cannot corrode or "freeze." After years of service you'll find the threads of a Kewanee Union as clean and sharp as when the union was first assembled.

5 POINTS OF SUPERIORITY

- Forged bronze to forged steel thread connection—no corrosion
- Forged bronze to forged steel ball joint seat—no gasket
- Every union tested with air under water—no leaks
- Solid three-piece construction—no inserted parts
- Easily disconnected—no force required

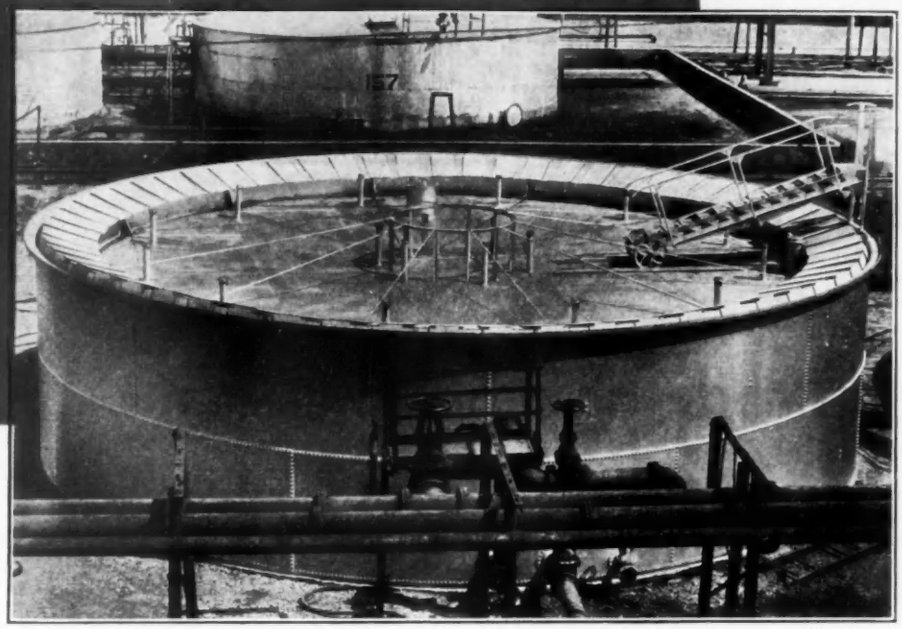


Trouble! a Corroded Union

WALWORTH

Walworth Company, General Sales Offices: 60 East 42nd St., New York
Walworth Company Limited, 660 St. Catherine Street West, Montreal, P. Q.
Walworth International Co., 19 Rector St., New York, Foreign Representative
. . . Distributors in Principal Cities of the World . . .

VALVES FITTINGS AND TOOLS



IN TEXAS

Efficiency Counts

Inefficient Decks Are Hazardous

Petroleum in its crude state or even in its lighter fractions such as gasoline or kerosene, is not inflammable while it is entirely in its liquid form.—But when the volatile hydro-carbons of the crude mix with the oxygen in the air, fire hazard is at once apparent.—Hundreds of thousands of dollars are consumed every year by oil fires, and hundreds of thousands more vanish with the escaping vapors of evaporation.—Expensive, but preventable losses.

Columbian Floating Decks Are Safe

It is an established fact that evaporation can occur only from the surface of the fluid exposed to the air.—The surface of the fluid stored in a tank equipped with a COLUMBIAN Floating Deck is unexposed to air.—Where there is no air space, there cannot be any vaporization;—where there is no vaporization, there is no evaporation.—Hence no fire hazard.—That's why the Columbian Floating Deck shown above replaced an inefficient, competitive deck.

Columbian Floating Decks are built to fit any size or type of tank.—Complete plans, specifications and prices gladly submitted upon request, giving the height, diameter, type of construction and kind of storage applying on tanks to be equipped.

Inquiries are invited on: Oil and Water Storage Tanks, Oil Settling Tanks, Lube Oil and Pressure Tanks, Protective Casing, Metal Buildings and Warehouses, Agitators and Condenser Boxes, Meter Houses and Drainage Troughs. Also on Reinforcing Welding Bars, Black Plates and Shapes and Specification Work of all kind.

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI

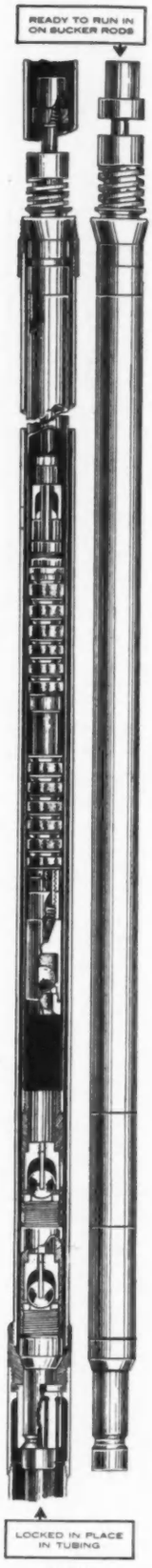
Today.....

when operating costs count....

Thousands of producing companies everywhere find that it pays to install EPCO Pumps.

EPCO Pumps have repeatedly proved that they quickly pay for themselves in savings.

Let EPCO help you to solve your cost problem.



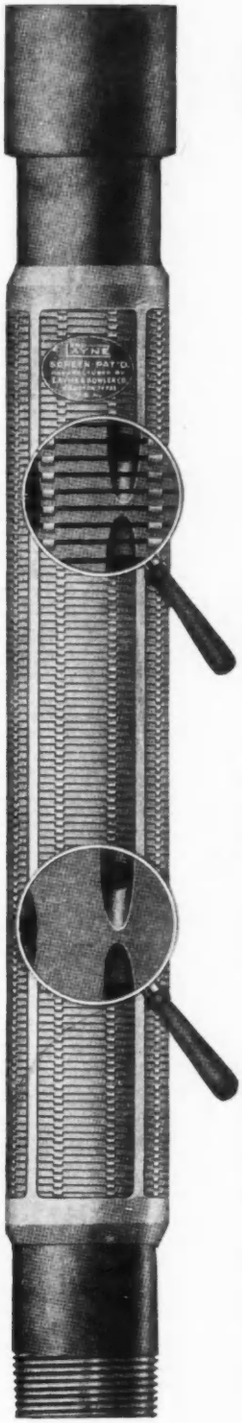
"Economy is Right"

The Economy Pump & Oil Tool Co.

Offices and Factory: 4424 East 49th St., Los Angeles, Calif., U. S. A. Office and Warehouse: Ft. Worth, Texas. Representatives at Tulsa, Bristow, Ponca City, Duncan, Seminole and Earlsboro, Oklahoma; Ft. Worth, Beaumont, Big Spring and Houston, Texas; Shreveport, Louisiana; also Representatives and distributing points at Long Beach, Huntington Beach, Santa Fe Springs, Taft and Bakersfield, California, or any National Supply Company Store throughout the world.

DISTRIBUTED BY THE NATIONAL SUPPLY COMPANIES

Keep the sand OUT
Let the oil IN



THE LAYNE

Milled Groove Screen

That is why you install a screen on your well. Then why not install a screen that has a reputation among thousands of users, for doing this job better than any other. That is the reputation of the LAYNE MILLED GROOVE SCREEN.

It is a reputation that is rightly deserved. For the LAYNE SCREEN with its patented milled groove and keystone wire wrapping does a perfect job of keeping out the sand and letting in the oil. What is most important is the fact that it does the job without clogging or sand cutting.

The milled groove gives a greater inlet area and more direct flow into the holes in the pipe. By doing this it increases production. In some cases the increase after installing the Layne Milled Groove Screen has been 33 1/3 per cent in others it has been as high as 100 per cent.

The Keystone Wire Wrapping keeps out the sand. The drilled and grooved pipe is wrapped all around with wires of this shape. The small edge next to the pipe and the larger edge to the outside. This allows the oil to enter through a narrow gauge opening and immediately enters to the large chamber between the vertical sides of the keystone wire. From six to eight of these wires pass over each milled groove. The wire is unbroken from beginning to end. It is sweated onto the pipe with lugs spaced at regular intervals to securely hold it in position.

If you want to keep the sand out and let MORE OIL in, install the LAYNE MILLED GROOVE SCREEN.

The Layne & Bowler Co.
HOUSTON, TEXAS

The Layne New York Co., 30 Church St., New York

Vickers Limited, London, England

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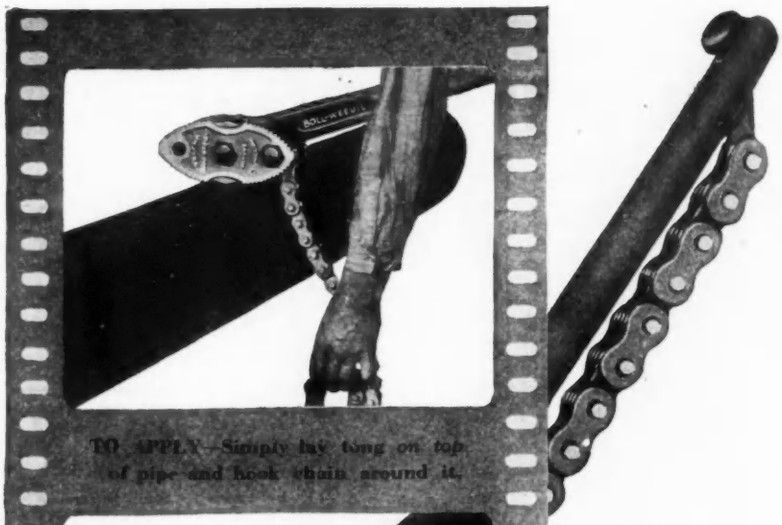
DID YOU EVER SEE ANYTHING SIMPLER?



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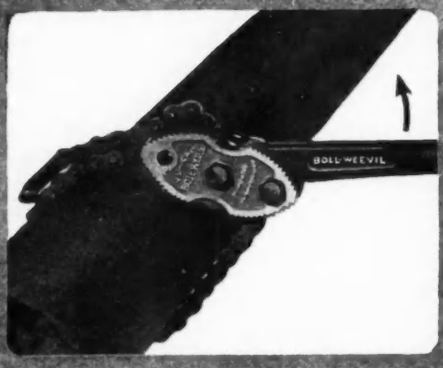

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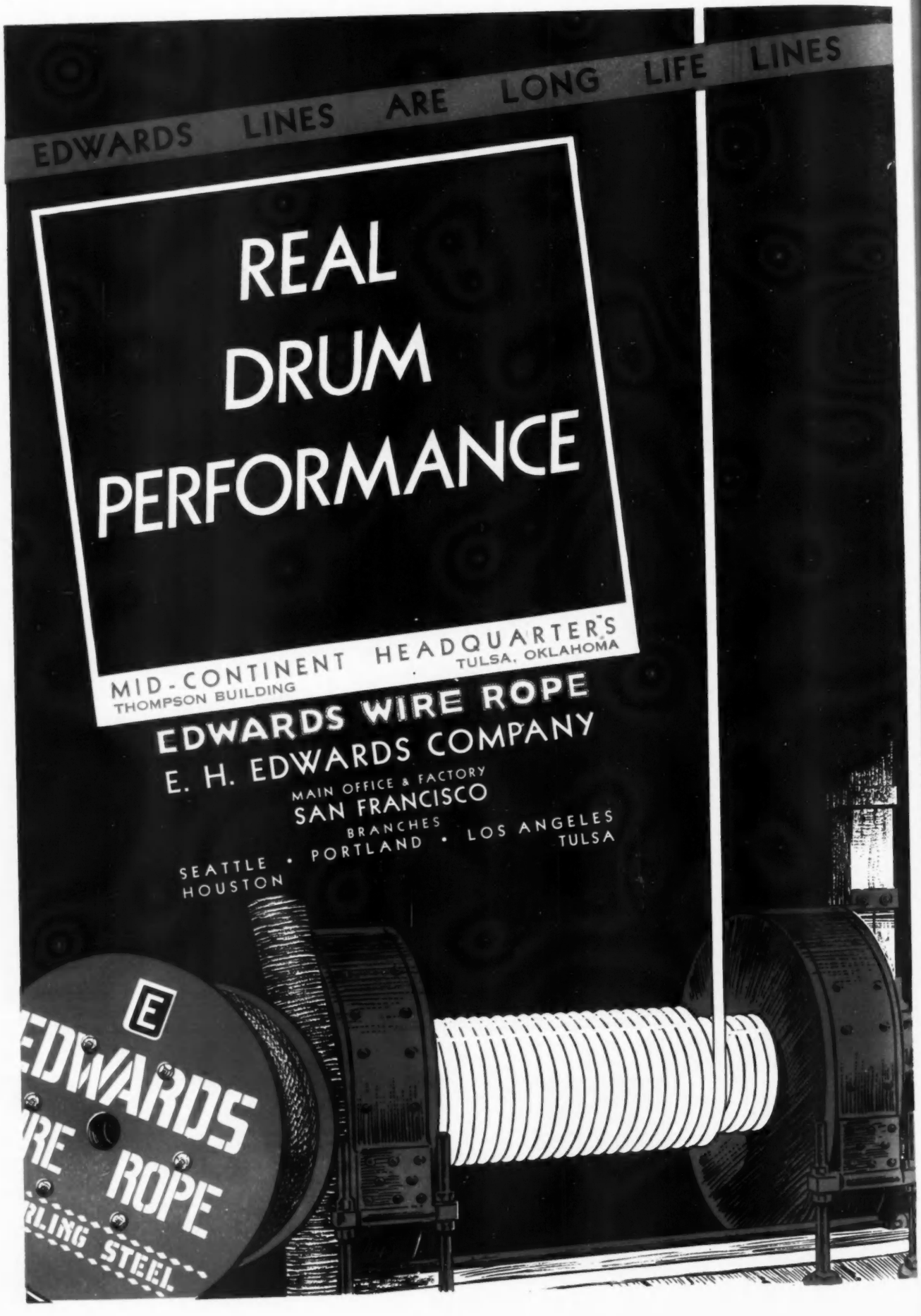
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THE OIL WEEKLY

JUNE 5, 1931
Vol. 61, No. 12

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Editor

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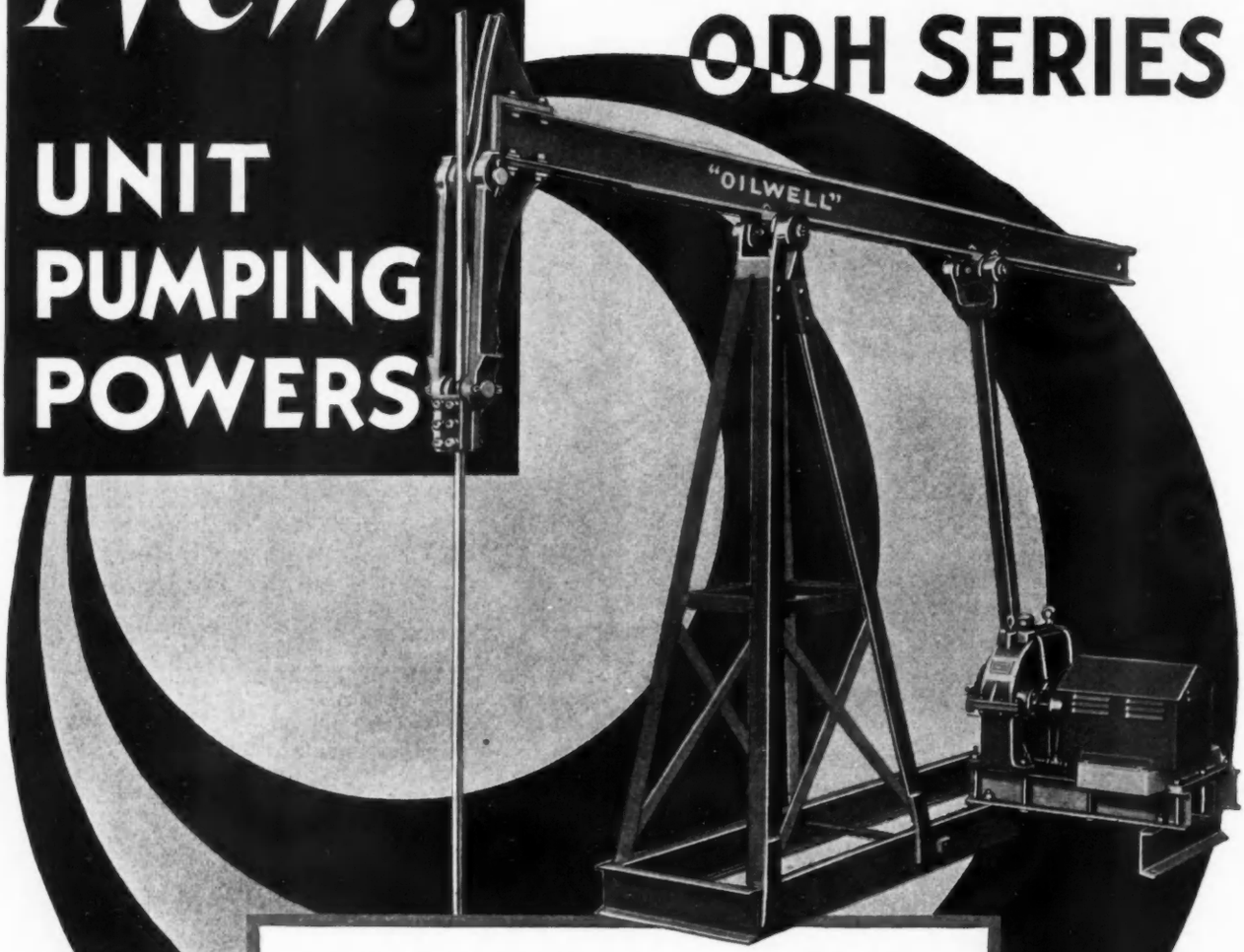

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THE OIL WEEKLY

VOLUME 61, NO. 12 JUNE 5, 1931

THE WEEK'S NEWS

Technical Problems Before Production Men at Dallas

Dallas, Texas.—Many of the general and technical problems of the producing branch of the industry occupied production executives, engineers, and field men gathered here June 3 and 4 for the first mid-year meeting of the Division of Production of the American Petroleum Institute.

Twenty-nine committee meetings, 19 technical papers and addresses, three general sessions, one open session, and at least four luncheon meetings and dozens of informal conferences comprised the two-day program although many of the committee meetings began as early as Monday morning.

As official "lookers-on" the production division enjoyed the presence of those officials who are members of the A. P. I. board of directors which is scheduled to go into executive session at Fort Worth Friday.

While essentially concerned with operating problems and mechanical efficiencies the Division of Production has taken full cognizance of the more popular economic discussions and full consideration was given to such subjects as unitization, conservation, proration with particular reference to the present economic situation.

Among the more technical discussions were included such subjects as, Field production efficiencies, power plants, determination of production allowances, corrosion, pollution, accident prevention, drilling methods, internal combustion engines, standardization, fire prevention, disposal of wastes, metallurgy, and research. (Several of the technical papers will be found in this issue of THE OIL WEEKLY and others will follow in subsequent numbers.)

Crude Price Declines More Severe in 1921

Comparison of crude market conditions during the depression of 1921 with that of 1931 reveals that crude prices were more severely reduced during the former depression than during the current depression. On January 1, 1921, Mid-Continent crude was posted at $3.50 a barrel. From January 24 to June 16, of that year, the price of Mid-Continent crude was reduced $2.50 a barrel, reaching a low point of $1.00 a barrel on June 16. Similarly, Pennsylvania oil on January 1, 1921, was posted at $6.10 a barrel and between the dates of January 8 and June 28, 1921, reductions were made so rapidly that the price declined $3.85 a barrel, ebbing to a minimum price of $2.25 a barrel on June 28. California crude was also severely reduced, although the period of low prices extended over two and one-half years. On January 1, 1921, California oil of 26 gravity was posted at $2.05 a barrel. Periodic reductions beginning on April 10, 1921, and extending to September 8, 1923, brought the price down to $1.40 a barrel to a minimum of but 65 cents on the latter date.

Following are the prices posted for Mid-Continent, Pennsylvania and California crudes during the former period of depression, which began in 1921:

Crude Price Changes During 1921 Depression

Mid-Continent (36 Gravity)		Pennsylvania (Nat. Transit)		California (26 Gravity)	
Date	Price	Date	Price	Date	Price
Jan. 1, 1921	$3.50	Jan. 1, 1921	$6.10	Jan. 1, 1921	$2.05
Jan. 24, 1921	3.00	Jan. 8, 1921	5.75	Apr. 10, 1921	1.80
Jan. 31, 1921	2.50	Jan. 21, 1921	5.50	July 5, 1921	1.55
Feb. 4, 1921	2.00	Jan. 31, 1921	5.00	June 4, 1922	1.30
Feb. 9, 1921	1.75	Feb. 4, 1921	4.75	June 22, 1922	1.05
May 2, 1921	1.50	Feb. 11, 1921	4.25	Jan. 7, 1923	.90
June 13, 1921	1.25	Feb. 15, 1921	3.75	Mar. 10, 1923	.75
June 16, 1921	1.00	Feb. 21, 1921	3.25	Sept. 8, 1923	.65
		Feb. 26, 1921	3.00		
		Apr. 18, 1921	3.25		
		Apr. 25, 1921	3.50		
		May 19, 1921	3.25		
		May 25, 1921	3.00		
		June 14, 1921	2.75		
		June 16, 1921	2.50		
		June 28, 1921	2.25		

In contrast with recent price reductions, the foregoing record

MID-CONTINENT CRUDE CUT 30 CENTS

Effective June 1, 1931, Stanolind Crude Oil Purchasing Company posted reductions for all grades of Mid-Continent crude. The reduction averages about 30 cents a barrel and new prices range from 25 cents a barrel for 29 gravity and below with a differential of 1 cent for each degree to 40 gravity and above which is posted at 37 cents a barrel.

Effective June 2, Magnolia Petroleum Company posted a similar reduction on crude purchased throughout Oklahoma, Kansas and North Texas, posting a price of 22 cents a barrel for oil of below 26 gravity, with a differential of 1 cent for each degree to 40 and above which is posted at 37 cents a barrel.

furnishes interesting food for thought. Checking back to the beginning of the present depression in the oil industry, it is found that crude prices entered upon a downward trend in July, 1929, as a result of extreme over-production. Mid-Continent crude, 36 gravity, was $1.36 a barrel on January 1, 1929, while Pennsylvania oil was posted at $4.00 a barrel, with California oil commanding a price of $1.09 a barrel for 26 gravity. Following a protracted period of increasing crude production, purchasers in the Mid-Continent area initiated a cut in the price of crude that amounted to a reduction of 16 cents a barrel for 36 gravity oil. This cut was announced on January 24, 1929, and was followed beginning with July 16 by a series of downward revisions in Pennsylvania crude prices that was only interrupted once, on August 22, 1930, by an increase of 25 cents a barrel. The result of over-production and price-cutting undermined the crude price structure to the point where Pennsylvania oil was reduced from $4.00 a barrel to its present price of $1.75, while Mid-Continent oil was reduced from $1.36 a barrel to its present price of but 29 cents a barrel for 36 gravity oil. California oil was not subjected to the drastic price reductions elsewhere until September 15, 1930, when competition with low-priced crudes necessitated a series of reductions that brought 26 gravity oil down to its present price of 47 cents a barrel.

From the facts cited here, it is seen that the present depression has not been accompanied by the same degree of crumbling prices, while it is also apparent that the law of supply and demand was prevented from functioning by reason of the fact that the industry inaugurated proration prior to the present period of actual depression. In the 1921 depression, prices were directly influenced by the supply and demand of crude and refined products; during the present depression, prices have been artificially maintained for a longer period than economic law dictated. That the industry might have been successful in preventing the crumbling price structure through proration is exemplified by the fact that it was only after East Texas became a serious market factor that the price structure failed to resist further efforts to control it. If the former depression is a criterion of what might have happened to the price structure without proration, it is seen that a more severe and much earlier crumbling of the crude market would have been experienced. As it is, crude prices have declined in a period of over two years from an average of 81 cents to $2.25 a barrel, whereas in the former period of depression prices declined in less than six months from $1.40 a barrel to $3.85 a barrel.

Comparisons

On a comparative basis, both periods of depression have been subjected to crude price declines of relative extent, although the declines of the former period of depression were much more rapid and of greater severity. Relatively, then, present crude prices are on about the same parity with those prevailing in the depression of 1921. On a monetary basis, however, prices during the former depression were reduced to a greater extent than during the present depression. The only material difference between the conditions prevailing in both periods of depression, however, is the fact that existing sources of supply present a far more difficult situation than that which confronted the industry during 1921. This leads to the conclusion that prices will not snap back with the same degree of acceleration that followed the depression of 1921. Present low prices have been delayed about a year and a half and the upturn, when it does come, cannot be expected to follow the course of recovery which culminated the depression of 1921. Had the law of supply and demand been allowed to function in the summer of 1929, prices of crude would have been reduced to their present level before the end of that year and producers would have been forced to get their houses in order. If the law of supply and demand had been allowed to function, the industry would have had 29-cent oil at the beginning of 1930 and there would not have been any incentive to develop new fields. Perhaps, under conditions similar to those of 1921, Oklahoma City and East Texas would not have become factors in the present period of depression.

President's Speech May Mean Liberalization of Trust Laws

Washington, D. C.—Liberalization of the antitrust laws for the relief of the oil and other natural resources industries, in such a way as still to preserve the protection of the individual, which President Hoover declares must be safeguarded at all costs, may be proposed to congress next December.

Possibilities that the administration would look with favor on such a move are seen in the recent pronouncements of the attorney general on the subject of antitrust legislation. Recent speeches of President Hoover and Attorney General Mitchell are being exhaustively studied to determine to what extent and in what way relief can be afforded the oil industry.

Speaking at Valley Forge, Pennsylvania, May 30, President Hoover likened the present depression to the situation which faced American patriots at that place during the darkest days of the Revolution. This speech was a restatement of the president's political philosophy, the various features of which are being interpreted in company with comparable expressions of Mr. Mitchell.

"Amid the scene of vastly growing complexity of our economic life," the president said, "we must preserve the independence of the individual from the deading restraints of government, yet by the strong arm of government protect his individual freedom, assure his fair chance, his equality of opportunity from the encroachments of special privileges and greed or domination by any group or class."

Analysis of the contentions of the independent oil producers in their campaign for aid in emerging from the situation in which they have found themselves as the result of overproduction would seem to bring them within the range of this statement. They have asserted that they are at the mercy of a small but strong group and have sought to bind themselves together in an agreement whereby to improve their condition.

Suggestions have been made, the effect of which would have been that the government blind itself to evasions of the antitrust laws, something, according to Attorney General Mitchell, that could not well be done. But now comes a belated interpretation of one of his speeches, wherein he said:

"Possibly congress might consider sympathetically some measure permitting combination to limit production of natural resources as an emergency matter to prevent waste, limited as to time, under government supervision, and to be followed by an early return to our present system of competition without restraints."

In political circles here wonder is being expressed that this particular suggestion has not earlier been seized upon as visualizing a compromise proposal for that which the oil industry has been seeking to accomplish by other means. The proposal has all the earmarks of presidential approval, coming as it did from his attorney general and bearing on a subject in which President Hoover has indicated vital interest.

(*Continued on page* 51)

Use of Internal Combustion Engines for Drilling*

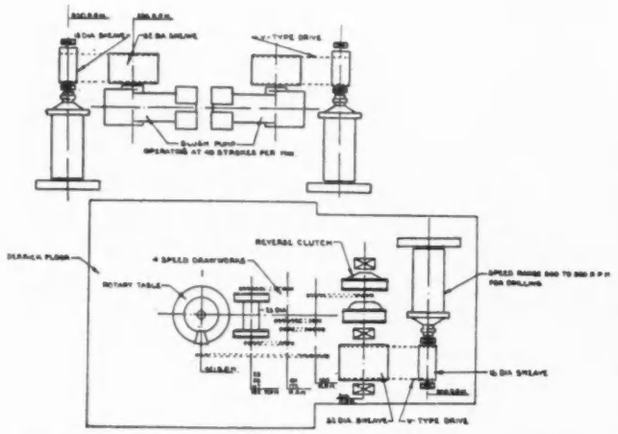
By DAVID L. TRAX[1] and R. R. HAWKINS[2]

INTERNAL combustion engines have been used for rotary drilling for several years, but only casual information has been released relative to their application and operation. The gas type has passed through the experimental stage to an accepted reality; hence it is fitting at this time to present some definite data relative to its performance. The Diesel type is for the most part still in the experimental stage, but information and data available indicate that as a prime mover for rotary drilling it has very favorable possibilities. The internal combustion engine may be used in rotary drilling, mechanically connected to the rotary drilling equipment, or as prime movers to generate electricity for the operation of electric motors mechanically connected to rotary drilling equipment. It is proposed in this paper to discuss only the former.

Prime movers are used in rotary drilling to operate the draw-works and rotary table, and to operate the mud pumps. In most cases, where internal combustion engines are used, one is used to furnish power to the draw-works and rotary table, while one or more are used to supply power to the mud pumps.

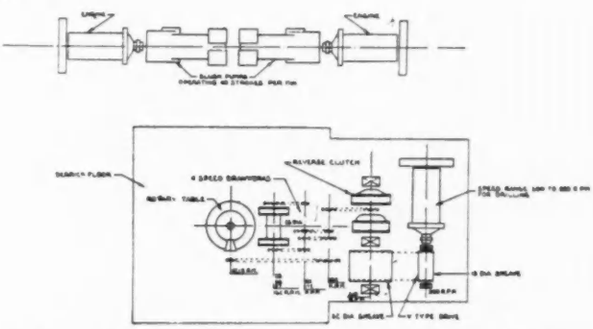
Gas or Gasoline Engines

Gas or gasoline engines are the multi-cylinder type, rated from 250 to 300 horsepower, with a speed variation of 500 to 900 r. p. m. The drilling engine drives directly from the fly wheel through a heavy duty clutch through a flexible coupling to an 18 inch 18-groove pulley, mounted between two bearings. This drives a two-speed reduction gear by means of a multiple V-belt having a 1 to 1 ratio with the engine. Speed reductions in the gears are 3.5 to 1, and 7 to 1. The gears drive through a jaw clutch between the high and low to the take-off shaft, which in turn drives a heavy-duty reversible clutch. From this clutch the jack shaft of the draw-works is driven by means of a standard rotary chain (Figure 1 and 2).



Gas or Gasoline Engine Layout for Rotary Drilling. (Mud pumps belted to engines.)
FIGURE 1

Two other engines of the same type and size drive the mud pumps by means of multiple V-belt drives. In some installations these engines are directly connected to the mud pumps through flexible couplings (Figure 1, 2, 3, and 4).



Gas or Gasoline Engine Layout for Rotary Drilling. (Mud pumps directly connected to engines.)
FIGURE 2

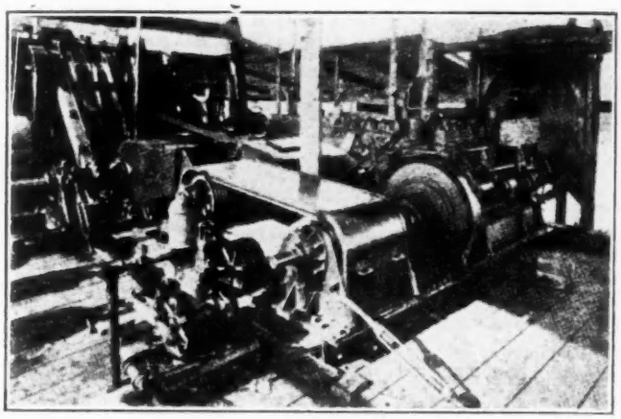


FIGURE 3

The maximum weight of the largest piece of equipment is 14,000 pounds.

All of the necessary equipment is installed in the regular

*Paper Presented at First Mid-Year Meeting, Division of Production, American Petroleum Institute, Dallas, Texas, June 4, 1931.

[1]Gypsy Oil Company, Tulsa, Oklahoma.
[2]The Texas Company, Tulsa, Oklahoma.

oil-field way, without special construction, equipment or labor. The installation or rigging-up time is usually less than with some of the other types of prime movers.

Performance

Information on a well drilled in a hard drilling area may be of interest.

The well was drilled to a total depth of 6656 feet. Six-inch drill pipe was used to 5648 feet, and the remainder

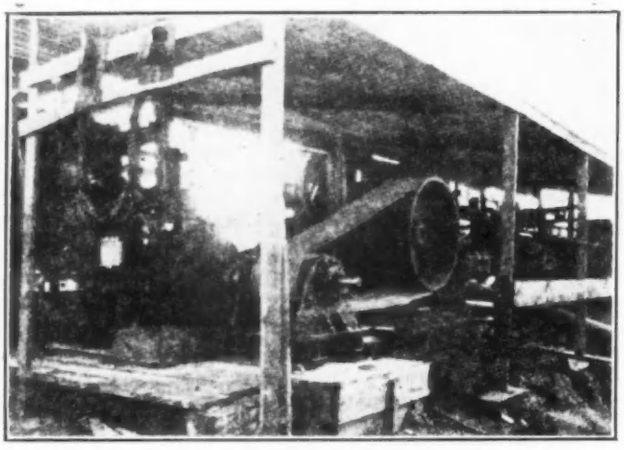


FIGURE 4

of the hole was drilled with four inch drill pipe. At 5648 feet a string of 9 inch, 40 pound casing was set in 11½ hours, without the necessity of washing in any of the joints.

The total time required for drilling and setting the nine inch casing was 54 days. The total time from start to finish at 6656 feet, including coring, allowing cement to set, and all other down-time amounted to 106 days. The time-depth diagram of this well shows total elapsed time with all shut-downs for reason as indicated (Figure 5).

Operating Cost Data

Data have been assembled covering 12 wells drilled to various depths using gas or gasoline engines as prime movers, and are presented in Table 1.

In the above table costs are based on gas at 20 cents per thousand cubic feet, and water at five cents per barrel.

The cost per gallon of gasoline varies for the different wells as follows:

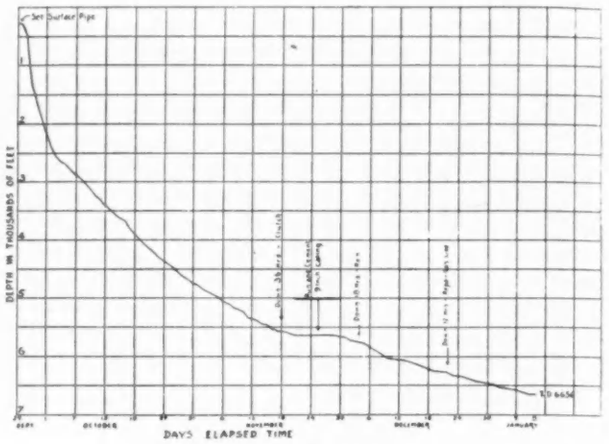
Well No. 9	$0.15
Well No. 10	0.18
Well No. 11	0.20
Well No. 12	0.12

The average cost of fuel and water per foot of hole drilled using gas is $0.33, and using gasoline $1.07.

The following hoisting time study is one of several made by the production committee of the American Society of Mechanical Engineers, Mid Continent section. It is given here chiefly to show that approximately one-third of the time necessary for a round trip with drill pipe is consumed in actual hoisting operations.

Investment and Depreciation

Investment must be considered on a directly comparable basis to other prime movers. For the gas type of prime mover, where three engines are used and auxiliary equip-



Time-Depth Diagram.
FIGURE 5

ment included, the investment is approximately 25 per cent greater than for some of the other types of prime movers of equal capacity.

It is difficult at this time to arrive at any definite conclusion as to the life of this equipment in order to establish a depreciation rate. However, if the depreciation rate be predicated at five years, it is probable that this would be determined more by obsolescence than by actual wear of the equipment.

Diesel or Oil Engines

As mentioned in the abstract, the Diesel type of prime mover for rotary drilling is still in the experimental stage, so that data are available on only a few wells which have been drilled.

Two full Diesel type, multi-cylinder engines, from 150 to 275 horsepower, with solid injection and variation in speed from 300 to 800 r. p. m., are used in combination to supply

TABLE 1.
Gas (Residue and Natural)

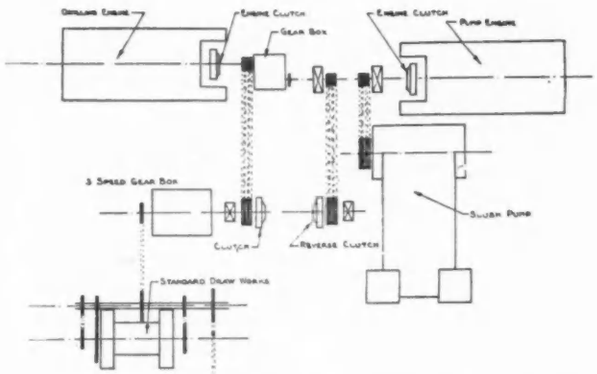
Well Number	State	County	Depth (Feet)	Drilling Time (Days)	Volume of Fuel (Thousand Cubic Feet)	Water Per Day (Barrels)	Fuel and Water Cost (Per Foot Drilled
1	Oklahoma	Lincoln	3,104	29	5,121	150	$0.40
2	Kansas	McPherson	3,381	22	4,395	150	0.31
3	Kansas	Harvey	3,433	19	4,462	150	0.30
4	Oklahoma	Lincoln	3,940	37	2,565	150	0.20
5	Oklahoma	Seminole	3,361	26	3,124	200	0.16
6	Kansas	Sumner	4,235	40	4,872	175	0.31
7	Oklahoma	Noble	4,877	63	9,754	200	0.53
8	Oklahoma	McClain	6,656	93	8,985	200	0.41
		Gasoline					
9	Kansas	Ellis	3,460	28.5	15,224	200	0.74
10	Kansas	Reno	3,906	41.0	27,125	165	1.34
11	Oklahoma	Grant	5,084	49.0	39,655	200	1.66
12	Oklahoma	Noble	4,343	56.0	16,648	160	0.56

TABLE 2.
Summary of Hoisting Time Study in Making Rount Trip at 3378 Feet with Gas-Engine Driven Equipment.

Operation	Time		Per Cent of Total Time
	Minutes	Seconds	
Laying down single joint	4	40	3.900
Actual hoisting operation	36	56	30.800
Setting slips and breaking out joint	9	36	8.000
Picking up fourbles and racking	2	28	2.060
Lowering elevator (light)	9	25	7.000
Laying down drill bit assembly, changing bit, and returning assembly to hole	9	57	8.300
Total time coming out—1 hour, 13 minutes, 2 seconds.			
Greasing crown block	..	27	0.037
Picking up fourbles and making up joints	10	7	8.450
Lowering pipe, unlatching elevator	15	..	12.500
Hoisting elevator (light)	11	23	9.500
Putting in single grief stem and lowering to bottom	10	..	8.350
Total time going in—46 minutes, 57 seconds.			
Total time used in making trip—1 hour, 59 minutes, 59 seconds.			

power to draw-works and mud pumps. The engines drive from fly wheels through heavy-duty clutches and flexible couplings to a gear box, thence to a jack shaft with heavy-duty reverse clutch. The draw-works, jack shaft, and pumps are then driven from this jack shaft by means of the standard rotary chains (Figure 6 and 7).

The full Diesel type engine, having no ignition system, and with a common governor control, may be readily synchronized and used in combination when necessary. A closed-water circulating system, either radiators or coils, is used for cooling. The equipment is also easily installed without any special construction, equipment or labor, and the time required is usually less than with some of the other types of prime movers.



Diesel Engine Layout for Rotary Drilling, Using Two Engines in Combination.
FIGURE 6

Performance

One well recently completed to a total depth of 3860 feet in wildcat territory required a total of 63 days including shut-down time for repairs.

The fuel used was crude oil, with the following analysis:

Gravity	38.3 deg. A.P.I.
Sulfur	0.264
Carbon residue (Conradson)	1.970
Moisture	Trace
Sediment	0.040
Acidity in grams of potassium hydroxide per gram of oil	0.028
Ash	1.580

The average amount of fuel used per hour by the drilling engine, when drilling was 7.5 gallons; when hoisting, 9 gallons; and the pump engine used 12 gallons.

A total of 15,000 barrels of water was used, but half of this amount was used when circulation was lost on three different occasions.

The cost of fuel per foot of hole drilled was $0.233, the cost of water per foot of hole drilled was $0.125, or a total fuel and water cost per foot of hole drilled of $0.358.

A summary of the operating time on this well is as follows:

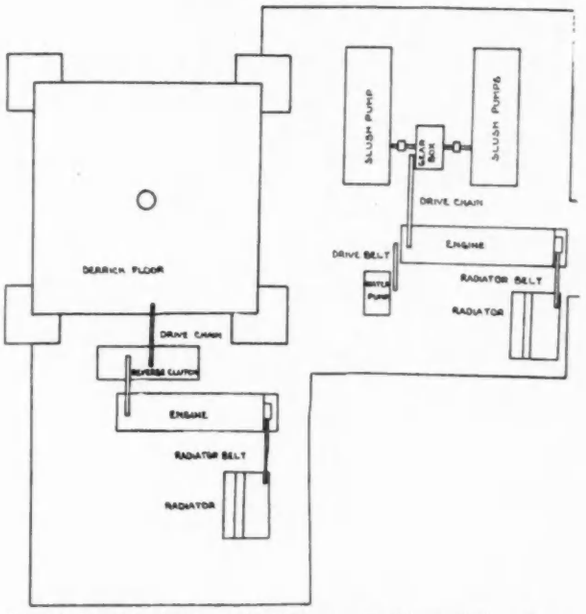
Rigging-up time	9 days
Making, casing, and cementing surface pipe	4 days
Actual drilling and casing time	31 days
Shut-down time	19 days
Total time	63 days

From another well now drilling at approximately 3500 feet, it is reported that the average fuel consumption for the operation of two engines for 24 hours is three barrels, with approximately three gallons of lubricating oil. Water required for cooling engines is two barrels per 24 hours.

Investment and Depreciation

As in the case of the gas engine, investment must be considered on a comparable basis to other prime movers. The full Diesel type equipment, where two engines with auxil-

(*Continued on page* 40)



Diesel Engine Layout for Rotary Drilling, Using Two Engines Separately.
FIGURE 7

Using Pressure-Drop In Sand To Measure Well Capacities

By H. D. WILDE, JR., and T. V. Moore
Humble Oil & Refining Company, Houston

ABSTRACT

IN this discussion a method for determining equitable allowable productions for wells in prorated fields is proposed. The system is based upon the pressure drop in the producing sand incurred by the flow of oil to the base of the well, and is offered as a substitute for the "potential production" determinded by open-flow tests. The data required may be taken at low rates of flow, and the results do not depend upon the type of equipment in the well. A numerical illustration is given to show the application of this method.

Paper presented at first mid-year meeting, Division of Production, American Petroleum Institute, Dallas, Texas, June 3, 1931.

THERE are, and there undoubtedly will continue to be, oil pools where it is either necessary or desirable to produce oil at a rate less than the maximum the pool is capable of producing. In such pools, it can be said that the production is curtailed. The reason for curtailing production may be to meet the market demand, to conform with a state-wide or nation-wide proration program established by governmental agencies; or it may be purely voluntary to decrease operation costs and increase the ultimate production. But whatever the reason for curtailing, there arises the problem of distributing or prorating the total production of the pool among individuals owning various parts of the pool. A satisfactory plan of distributing the production should have four characteristics: 1, It should be equitable to all owners; 2, it should not damage the pool physically; 3, it should not penalize efficient and economical operation; and, 4, the allowances under it should be susceptible of rapid and accurate determination.

It is not easy to arrive at a definition acceptable to everyone of the term "equity." This is not surprising when one considers the present confused state of the law governing ownership of oil. Nevertheless, it is felt that the majority will agree that an equitable plan would allot to each owner a production rate that bears the same proportion to the total rate from the pool as the amount of recoverable oil underlying his surface property bears to the total recoverable oil in the pool. The main difficulty in developing such a plan is to find a simple measure of the recoverable oil under an owner's property.

The writers are presenting in this paper a method for distributing, or prorating, the total production from a pool which they believe meets the essential requirements. Before going into the details of the proposed method, a number of methods that are being used, or have been used, will be reviewed briefly, and the extent to which they fail to meet the essential requiremnts pointed out.

Existing Methods

Time Basis—Perhaps the simplest manner in which the total production from a field can be distributed is on a time basis. Under this scheme, every well in the field is allowed to produce at its maximum rate for a given period, and is then shut in for another given period. The lengths of the producing and the shut-in periods are adjusted to give the desired total production. If all wells are equipped similarly, such a plan is reasonably equitable to the various owners, but there are several disadvantages to the plan. In the first place, it is generally conceded that the ultimate production under wide-open flow will be less than if the wells are produced at lower rates. This is particularly true in fields where water can move in toward the wells. Consequently, production at the maximum rate is physically harmful to the pool. Large-capacity lines, separators, meters, and tanks are required to handle the full capacity production, and these facilities are used only a fraction of the time. This unnecessaryily increases the investment in the well. Furthermore, the various owners would be encouraged to drill more wells than necessary, because the more wells on a given tract the greater production the tract will be allowed. This results in an excessive financial outlay. Because of these disadvantages, a method of distributing the production that provides for a steady rate of production from each well is preferable.

Acreage Basis—In some fields, the total production is distributed to the various owners on an acreage basis. On this basis, each owner produces at a steady rate a fraction of the total production equal to the fraction that his productive acreage bears to the total productive acreage. Such a basis is satisfactory provided the pay sand (or lime) and the distribution of the recoverable oil are uniform over the entire area of the field. But in most pools there is a variation in the thickness of the pay sand, in its porosity, permeability, and saturation; and all these factors affect the amount of recoverable oil underlying a given property. Consequently, a plan of distribution based on acreage alone in many cases is not equitable to all property owners. Owners whose acreage overlies thin, or tight, or partially saturated pay sand are given a greater allowance; and owners over rich, thick, open, or fully saturated pays are given less than they deserve.

"Potential Production" Basis—Another method of prorating the production from a pool is based on the amount of oil the wells will produce on open flow, which is termed the "potential production" of the wells. According to this plan, each owner is given an allowance that bears the same ratio to the total production from the pool that the total of the open-flow tests of his wells bears to the total of all open-flow tests in the field. This plan assumes that each owner is entitled to produce in proportion to his capacity to produce, and that the open-flow test is a measure of this capacity. Unfortunately, the open-flow test

A Proposed Method for Equitably Determining Production Allowances in Prorated Fields

is materially affected by the size of tubing or casing used in the well, the size and length of the surface-flow lines, the depth of the well, and the gas-oil ratio. Furthermore, by drilling additional wells, the total open-flow production test of a property is increased. The open-flow test is a measure of the capacity of a property to produce in its existing condition, but it is not proportional to the amount of recoverable oil under a property. Consequently, it does not distribute the production equitably as defined in this paper. As the drilling of additional wells is encouraged, and as the wells must be equipped with flow lines, separators, meters, and tanks of sufficient capacity to handle the production under open flow, operating costs are unnecessarily high. An operator is encouraged to equip his wells in such a manner that the open-flow tests will be as large as possible without regard to efficient operation. The open-flow test itself is objectionable, because even during the short time that the well is allowed to flow wide open it can damage the well physically, particularly in water-drive fields. Thus, a method based solely on open-flow test fails to meet most of the requirements set out for a satisfactory method.

Acreage and Maximum-Capacity Basis.—A method widely used at present is based on both an acreage and maximum-capacity basis. The pool or field is divided up into a number of units of equal area. The average potential production of the unit is determined by summing up the potential production of all wells on the unit and dividing by the number of wells. A definite portion, usually 25 per cent of the total production from the field, is divided equally among the various units. The balance of the total production (75 per cent) is distributed among the units in proportion to their average potential. As the average unit potential is a fairly good, if not absolutely accurate, measure of the recoverable oil under the unit, the method is reasonably equitable. It also has the advantage that the drilling of more than one well to a unit is discouraged, since in cost cases the additional wells do not increase the average unit-potential and do not increase the unit allowance. The disadvantage of the plan is the open-flow test of the wells and the evils associated with it. This should be repeated at intervals. Furthermore, an operator is more concerned with getting large open-flow tests than with efficient recovery of oil. The installation of efficient equipment is frequently accompanied by an unjust reduction in production allowance.

Existing Methods Do Not Fully Meet Requirements.—It is seen that the methods just discussed all fail to satisfy fully the four requirements enumerated at the beginning of this paper. It is felt that these desirable characteristics are more nearly met in the last method outlined than in any of the others. This method is being successfully used in many fields today, and is being adopted in many of the newly prorated fields. In the plan proposed in this paper, an attempt is made to retain the desirable features of this method, but to substitute for the open-flow test a measure of the productivity of the property that can be determined without injury to the pool and that does not discourage efficient production practice. This measure is based on the relation between the rate at which oil is produced and the pressure differential set up in the producing formation. Before presenting the details of the method, the aforementioned relation will be discussed briefly.

Bottom Hole Pressure Relationship

When a well is shut in, the pressure at the base[1] of the well is equal to the rock pressure, i.e., the pressure in the surrounding formation. In order to produce the well, the pressure at the base of the well must be lowered, and the pressure-differential thus set up between the base of the well and the surrounding formation causes oil and gas to move to the well

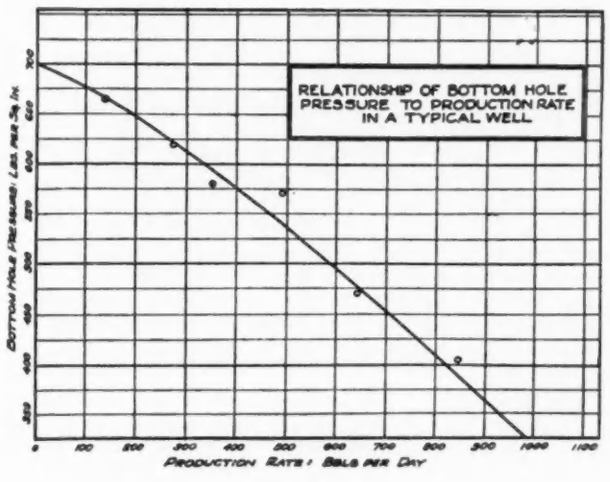

RELATIONSHIP OF BOTTOM HOLE PRESSURE TO PRODUCTION RATE IN A TYPICAL WELL
BOTTOM HOLE PRESSURE: LBS. PER SQ. IN.
PRODUCTION RATE: BBLS PER DAY

FIGURE 1

bore. The lower the pressure maintained at the base of the well, the greater is the force that drives the oil to the well and, consequently, the greater the production rate. As pressure-differential depends upon the pressure at the base of the well, in any given well there should be a definite relation between the pressure at the base of the well and the rate of oil produc-

[1]The base of the well is considered to be that part of the well that is drilled through the producing sand or lime.

tion. Investigations carried on in wells in West Texas, North Texas, and the Gulf Coast, including wells in lime, in consolidated sand, and in unconsolidated sand, with and without water-drive, have demonstrated that such a relation does exist. The curve presented in Figure 1 is typical of the curves obtained showing how the quantities are related.

In order to minimize the effect of experimental error, a smooth curve is drawn through the points obtained by actual measurement, and the production rate corresponding to a given bottom-hole pressure is read from this curve. For the purpose of this paper, rock pressure is defined as the bottom-hole pressure corresponding to zero rate of production. Its value may be directly from the curve. The difference between rock pressure and the bottom-hole pressure at any given production rate is the pressure-drop in the sand required to maintain that production rate. The rate of oil production secured with a given pressure-drop in the sand varies widely in different wells. The character of the sand, its porosity, permeability, and thickness, the extent to which it is saturated with oil, the physical properties of the oil, and the quantity of free gas which is associated with the oil are the important factors which control the pressure-drop in the sand for a given rate of flow. Porosity and sand thickness, by controlling the area of the pore spaces through which oil may flow, fix the linear velocity which must be established to maintain a given rate of production. Permeability depends upon the effective, or average, diameter of these pore spaces and, hence, controls the pressure-gradient which is required to maintain a certain velocity of flow. The physical properties of the oil (especially viscosity) influence pressure losses in a similar manner. Large quantities of free gas flowing to wells must, of course, occupy a considerable portion of the space between the sand grains, thus reducing the void space through which oil may flow. This effect probably influences the pressure losses.

The amount of oil underlying a given property is directly proportional to sand thickness, porosity, and saturation. The amount of this oil which can be recovered depends upon permeability, the conditions existing in the reservoir (such as pressure and temperature), and the nature of the oil. As was shown previously, these same factors affect in a comparable manner the rate at which oil can be produced with a given pressure-drop. Thus, the production rate at a given pressure-drop should be a good index of the recoverable oil under a property.

If open-flow test resulted in the same bottom-hole pressures in all wells in a field, the open-flow production could be used as an index of the productivity of a property. Unfortunately, the bottom-hole pressure at open flow is markedly influenced by the back pressure at the well head and the pressure-drop in the flow string. The back pressure at the well head even under open-flow is not zero, but depends upon the size and length of the lease lines and the location of the separator. The pressure-drop in the flow string depends upon the depth of the well, the size of the tubing or casing through which the oil is conducted to the surface, the gas-oil ratio, and the production rate. By changing the design of the flow string and the surface equipment, the bottom-hole pressure at open-flow and, consequently, the potential production, can be varied over a wide range. Furthermore, if the test covers only a short period, the open-flow gage is affected by the history of the well immediately before the test. For these reasons, open-flow tests are not comparable and do not furnish a true measure of the capacity of the various wells to produce oil.

It is obvious that a true measure of the rate at which wells are capable of producing oil must depend on the character of the producing formation and the conditions under which the fluids therein are found. The equipment which happens to be in the well should have no bearing whatsoever upon it allowable production under the restrictions imposed by proration. It is seen, therefore, that a need exists for some method of measuring the ability of a well to produce which is dependent only upon the nature of the sand and the conditions existing therein, data for which can be obtained without resorting to excessive rates of flow. If the new method is to be used in a field already under proration, practical considerations require that allowances distributed according to the new method should not differ widely from those distributed under the existing method.

Proposed Method

In order to meet the need for such a method, the following system of allocating production allowances in prorated fields is proposed:

The field is divided into units of equal area. Twenty-five per cent of the total production is distributed equally among the various units. The remaining 75 per cent is distributed among the units in proportion to their capacity to produce oil. These capacity allowances for the individual units are determined from the curves showing the relation between bottom-hole pressure and production rate. Inasmuch as the pressure-differential in the sand is the driving force which causes the flow of oil to the well, an equitable method of distribution would allow all operators to produce oil under a driving force which is a certain percentage of total driving force available. Hence, for any given well, the allowance is the rate at which it can produce oil when the pressure drop in the formation is a definite percentage of the rock pressure. This percentage is fixed for the entire field. On units having more than one well, the capacity allowance for the unit is the average of the capacity allowance of the various wells thereon. For units having more than one well, the allowance may be taken from a single well or distributed among the various wells in the unit, depending upon local conditions; but in no case shall the sum of the production from the various wells exceed the unit allowance. The percentage of the rock pressure used in determining the capacity allowances is so adjusted that the sum of the unit-capacity allowances will be 75 per cent of the total production which it

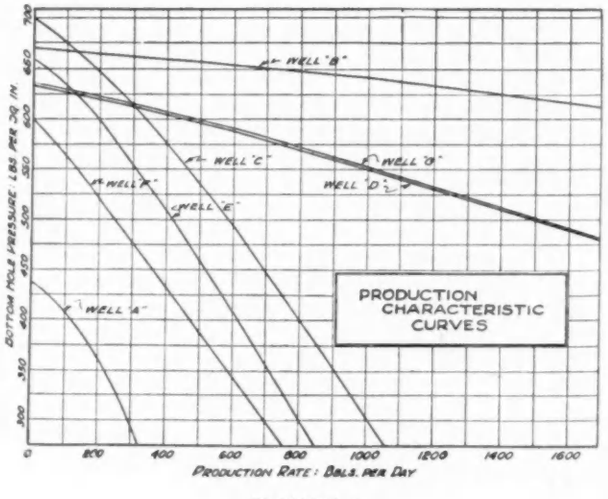


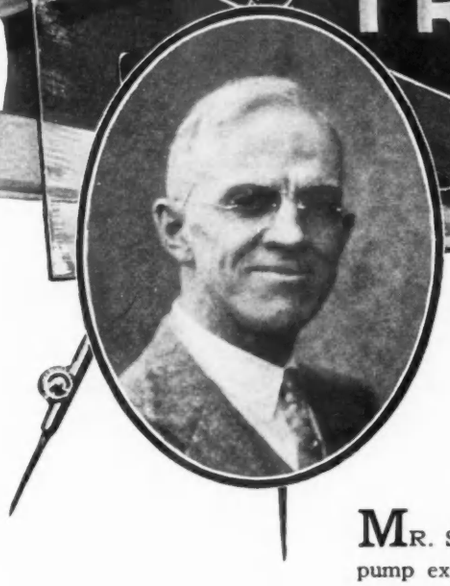
FIGURE 2

is desired to take from the field. The determination of the value of the percentage of rock pressure which will fix the field production at any required value may be accomplished by simple interpolation. A procedure which may be followed in this determination is outlined in the numerical illustration given below.

Numerical Illustration

In order to illustrate more clearly the application of this proposed system, the following example of its application to an hypothetical field is given. The data required to determine the relationship between bottom-hole pressure and production

TRANSIT'S Chief Engineer



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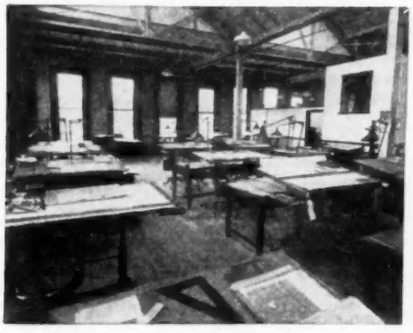

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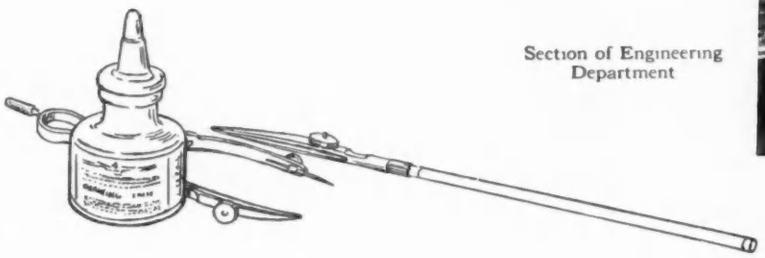

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rate, as well as the open-flow tests, for the wells in this hypothetical field have actually been taken on seven wells in West Texas. The curves showing these relationships are presented in Figure 2. Let us assume that these seven wells constitute an entire field whose total production is to be 1000 barrels per day.

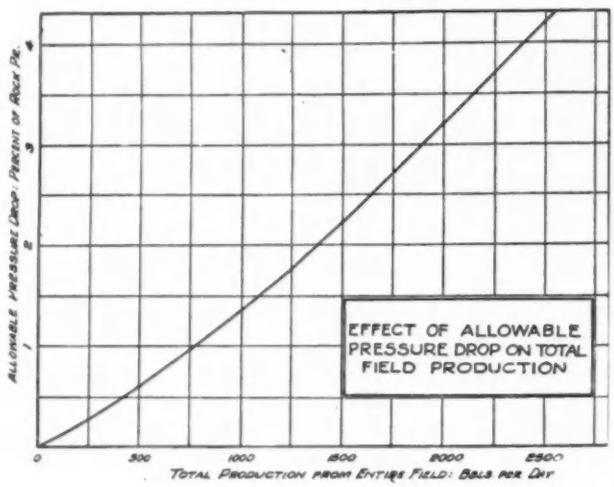

FIGURE 3

Assume well "D" and "E" to be in the same unit. In estimating the allowances, the first problem is to determine what the percentage drop of rock pressure for the field shall be in order to restrict the production of the field to the required value of 1000 barrels per day. From the curves in Figure 2, the production of the wells corresponding to any desired pressure-drop in the sand may be read. By assuming a value for the allowable percentage drop in rock pressure, the corresponding production of each well in the field may be determined. The average capacity

TABLE 1

Allowances Distributed in Accordance with Pressure-Drop Method

Well	Rock Pressure (Pounds Per Square Inch)	Allowable Pressure-Drop[1] (Pounds Per Square Inch	Allowance on Capacity[2] (Barrels Per Day)	Average Unit Allowance (Barrels Per Day)	Unit Allowance on Acreage (Barrels Per Day)	Total Allowance (Barrels Per Day)
A	437.0	5.99	34	34	41.7	75.7
B	671.0	9.20	361	361	41.7	402.7
C	700.0	9.58	51	51	41.7	92.7
[3]D	633.0	8.66	153	99	41.7	140.7
[3]E	659.0	9.03	44			
F	600.0	8.21	26	26	41.7	67.7
G	634.5	8.70	179	179	41.7	220.7
				750	250.2	1,000.2

[1]Allowable pressure-drop is equal to 1.37 per cent of rock pressure.
[2]Read from curves on individual wells shown in Fig. 2.
[3]Wells "D" and "E" on single unit.

allowance of the units is then calculated. The sum of the capacity allowance of all units is added to obtain the total capacity allowance of the field at this percentage drop in rock pressure. The acreage allowance is then added to obtain the total field production. The production of the field is then estimated for other values of allowable percentage drop in rock pressure, thus establishing a curve of allowable pressure-drop against total production of the field. Such a curve for the hypothetical field in question is shown in Figure 3. From this curve, the allowable pressure loss which will fix the production at any required value is easily read.

For an outlet of 1000 barrels per day, the allowable percentage drop in rock pressure for the hypothetical field is seen to be 1.37 per cent. Table 1 presents a summary of the calculation of the allowances of the various units by this method.

For the purpose of comparison, let us now estimate the allowances of the units on the basis of potential production determined by the open-flow test. Table 2 gives the actual open-flow tests, the average unit potential, and the fraction of the total unit potential which each unit contributes:

TABLE 2

Open-Flow Tests

Well	Open-Flow Test (Barrels per Hour)	Average Unit Potential (Barrels per Hour)	Fraction of Total
A	66	66	0.0705
B	379	379	0.4060
C	64	64	0.0680
D	255	158	0.1680
E	62	...	.....
F	98	98	0.1045
G	171	171	0.1830
		936	1.0000

If the outlet of the field is to be 1000 barrels per day, 750 barrels are to be distributed in proportion to the average unit potential. The allowance of each unit which is based on potential is the ratio of the average unit potential to the total potential, multiplied by the field allowance which is to be distributed in proportion to the potential. Table 3 is a summary of the calculations involved in the distribution of these allowances upon the basis of the open-flow test.

TABLE 3

Allowances Distributed in Accordance with Method Using Open-Flow Test

Unit	Ratio Average Unit Potential to Total Potential	Unit Allowance on Potential (Barrels Per Day)	Unit Allowance on Acreage (Barrels Per Day)	Total Allowance (Barrels Per Day)
A	0.0705	53	41.7	94.7
B	0.4060	304	41.7	345.7
C	0.0680	52	41.7	93.7
D-E	0.1680	126	41.7	167.7
F	0.1045	78	41.7	119.7
G	0.1830	137	41.7	178.7
		750	250.2	1,000.2

In Table 4 is presented a comparison of the allowances of the various wells as calculated on the basis of the open-flow tests and on the basis of pressure losses in the sand for field outlets of 1000 barrels per day and 2000 barrels per day.

TABLE 4

Comparison of Methods

Unit	Outlet 1000 Bbl. Per Day		Outlet 2000 Bbl. Per Day	
	Open-Flow	Pressure-Drop	Open-Flow	Pressure-Drop
A	94.7	75.7	189.3	149.3
B	345.7	402.7	692.3	820.3
C	93.7	92.7	185.3	182.3
D-E	167.7	140.7	335.3	281.3
F	119.7	67.7	240.3	139.3
G	178.7	220.7	357.3	427.3

It is seen that there is a fair agreement between the allowances calculated by the two methods. However, the open-flow tests on these wells were taken some 18 months prior to the bottom-hole pressure data. Because of this, and because the open-flow tests are not comparable among themselves due to differences in the equipment in the wells and the manner of taking the tests, a close agreement is not to be expected.

Securing Necessary Data

The successful application of this method depends, to a large extent, upon the development of simple, rapid, and

(*Continued on page* 40)

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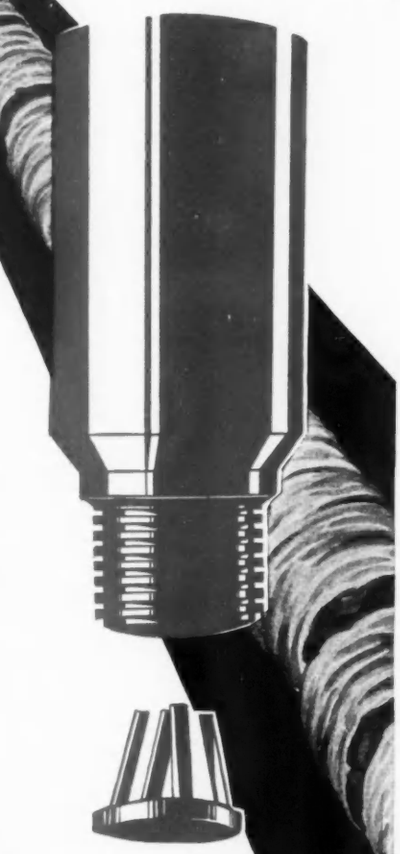

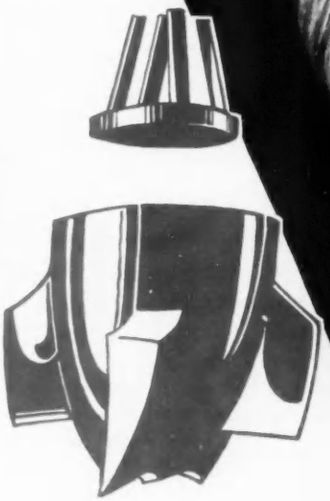

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Behavior of Mud Pumps

By HARRY E. HAYES
General Petroleum Corporation of Calif., Los Angeles

ABSTRACT

IN the majority of rotary drilling rigs steam is employed as a means of driving the mud pumps. Power pumps are also in use, actuated either by internal combustion engines, alternating-current motors or direct-current motors.

In this paper one of the phases of mud-pump performance is discussed. The behavior of the pump, or its reaction to a given drilling condition, is illustrated by means of graphs in which the pump characteristic is plotted over the curves of flow resistance that obtain for certain sizes of drill pipe at various depths and sizes of hole. These graphs indicate the mud pressure and volume that will result when a given pump combination is operated at full throttle against a given flow condition. Inspection of the graphs will show the behavior with various types of drive.

Paper presented at first mid-year meeting, Division of Production, American Petroleum Institute, Dallas, Texas, June 4, 1931.

IN THE rotary drilling rig of today it is customary to install two double-acting two-cylinder mud or slush pumps for the purpose of circulating mud or fluid in the hole during drilling operations. Other duties include cementing, mud mixing, mud transfer, pressure tests of wells, killing of flowing wells, and operation of hydraulic knuckle-joint wall-hooks and reamers.

In most cases the pumps are of the duplex type provided with steam cylinders and direct-acting piston rods. The 14 x 7¼ x 14-inch pump is perhaps representative of the common practice, although larger pumps and many smaller pumps are also used. Pumps are designed for maximum working pressures of 1000, 1500 or 3000 pounds per square inch, and operate on boiler pressures ranging from 125 to 225 pounds per square inch.

Where the motive power is other than steam, the pumps are of the power-driven type having a "power end" in place of the steam cylinders of the duplex pump. The regular fluid end is connected to a power end, which includes a crankshaft or eccentric shaft; connecting or eccentric rods cross-heads and guides; and also a jack shaft with pinion to give a speed reduction inside the power end of about 5 to 1. A V-belt drive from an electric motor or internal combustion engine to the jack shaft of the pump completes the installation with a total speed reduction of about 22 to 1, depending on speed of prime mover. In some cases the motor is flat-belted, chained, or geared to the pumps.

Laws of Flow

When drilling, circulation is to be maintained at a reasonable rate with the mud passing down inside the drill pipe and through the tool joints, through the nozzle holes at the bit, returning upward to the surface through the passage afforded by the space between the drill pipe and the wall of the hole or casing, restricted at intervals by the presence of tool joints and collars on the drilling string.

The mud-flow relation will be $Q = K P^n$, where Q is the flow in cubic feet per minute, P the pressure in pounds per square inch, and K a constant. For a given drilling condition the value of the exponent n will be the weighted average of the exponents for all types of fluid passage in the complete flow circuit. These values range from 0.500 to 0.525; and, since the drilling combinations of depth, size of bit, and size of drill pipe are many and varied, the resultant exponent will vary slightly from day to day, depending on the well conditions and the casing program. Changes in weight and viscosity of drilling mud will also affect the pressures required.

Since the purpose of this discussion is to compare the behavior of different pumps and types of drive under similar conditions of flow resistance, it appears feasible to assume an exponent of 0.5, or square root, in order to facilitate discussion. This may be done without material departure from the pressures as found by test.

From the expression $Q = KP^{0.5}$ it may be seen that the pressure required varies as the square of the change in flow and inversely as the square of the change in the constant K. The hydraulic horsepower varies as the cube of the change in flow and inversely as the square of the change in the constant K.

Values of the Constant "K"

Neglecting the initial or shearing pressure, each drilling condition will have a particular value of constant K. On pressure tests the value may be practically 0. On low-resistance cement jobs, where the differential between mud and cement weight is an aid to the pumps, the value of constant K may be as high as 9. The range from 0 to 9 probably covers all of the operations in the drilling of a well. Some gaps in the range will occur, as for instance when a change is made in size of drill pipe at a given depth; but, in general, the range is fairly well occupied by drilling operations, although it should be recognized that a given equipment may be operated for a period of years before its activities will cover the entire range.

Construction of Flow Charts[1]

Given the values of the constant K, flow curves may be plotted for various stated drilling conditions as in Figure 1. Seven flow cases are considered, one for each size of drill pipe up to 6⅝-inch. A. P. I. in appropriate depth and diameter of hole; one for a typical high-resistance cement

[1]Source of data: The graphs of this paper are based upon fragments of data gathered from time to time in the prosecution of other work. For this reason it appears advisable to confirm or modify the values by means of complete tests arranged to extend the graphs to cover other sizes and arrangements of mud pumps operating under field conditions.

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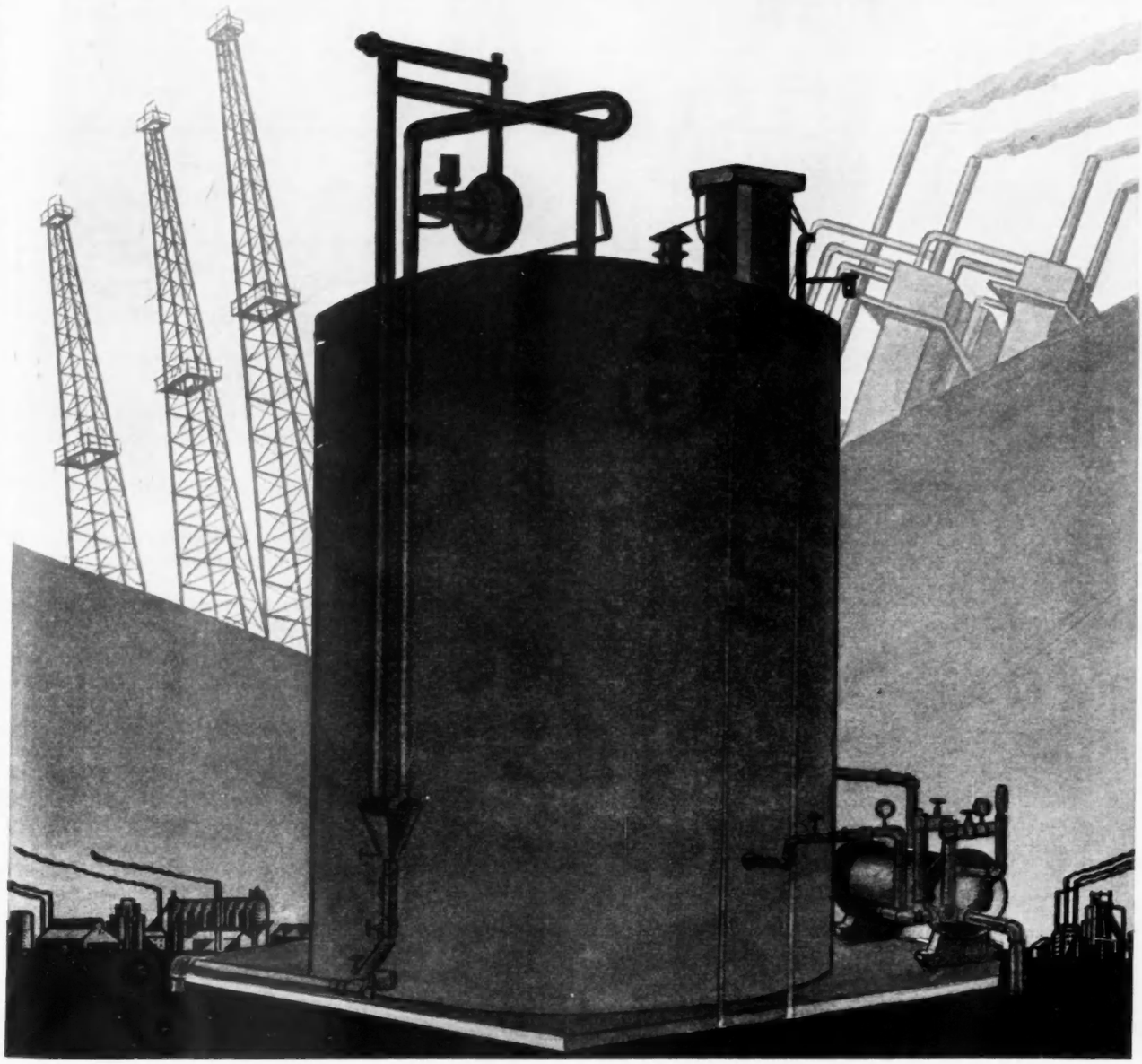

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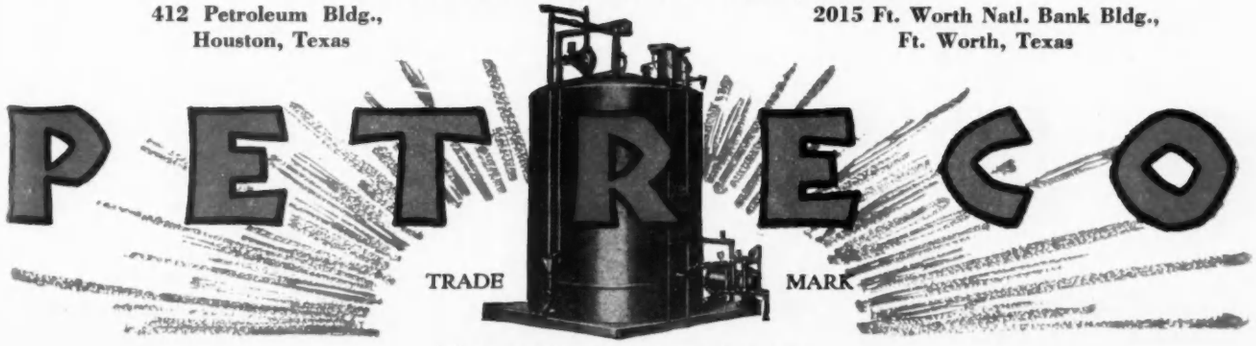

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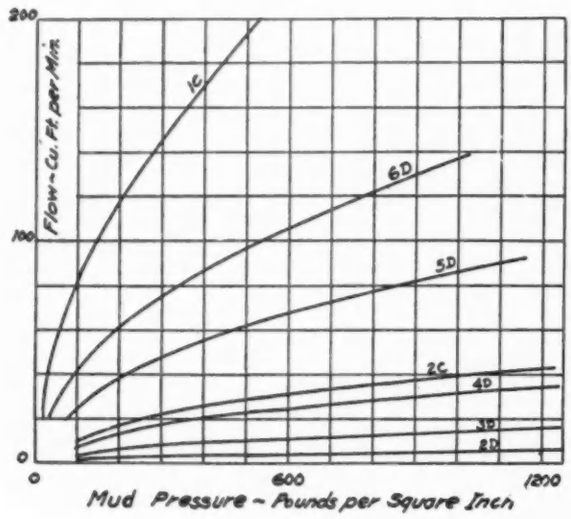
job, and another one for a certain phase of a low-resistance cementing operation. These curves show the pressure (in pounds per square inch) necessary to force a given mud rate (in cubic feet per minute) against the resistance of a stated drilling condition.



Operation	Mark	Length (Feet)	Pipe Size (Inches)	Diameter Hole	Factor "K"
Drilling	2D	7,500	2⅜	3⅞	0.17
	3D	7,200	3½	5⅝	0.46
	4D	7,300	4½	7⅞	1.07
	5D	4,100	5 9/16	12	2.74
	6D	3,900	6⅝	18¾	4.36
Cementing	1C	6,300	9	12	8.60
	2C	6,700	6⅝	7⅞	1.26

Flow Curves of Mud for Various Drilling and Cementing Conditions

FIGURE 1

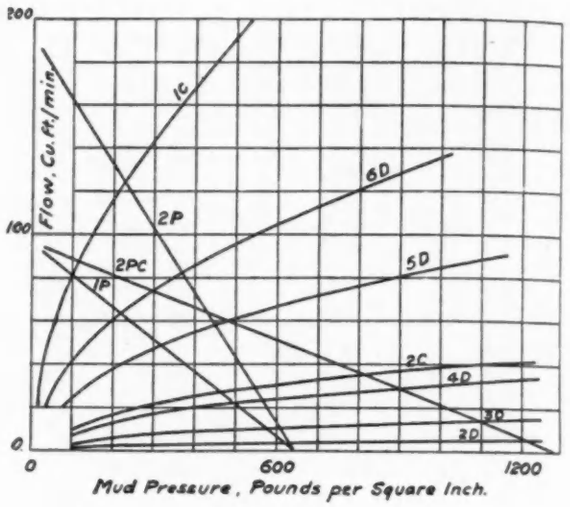
Influence of Pump Behavior

The mud rate that will occur against a given drilling condition depends upon the behavior or what may be termed the pressure-volume characteristic of the pump. The form of this characteristic depends upon the speed-torque characteristic of the prime mover. The magnitude depends upon the capacity installed, the speed ratio, and the size of liners.

By plotting the pump characteristic over the flow condition curves, it is possible to ascertain the operating pressure and volume under a given condition.

Figures 2 and 3 are plotted for steam pumps and alternating-current motor-operated pumps of dimensions as noted, working at full open throttle against the various flow conditions. The intercept of the pump characteristic with the stated flow condition indicates the operating pressure and volume. It will be noted that three pump curves are shown in each figure. It is common practice to parallel or compound fluid ends of pumps, and the curves for these combinations are shown as well as the curve for a single pump.

The curves for the steam pump show relatively high volumes of mud at low pressures, and low mud volumes at high pressure. Crossing of the curves of two-pump operation (parallel and series-compounded) indicate that, at the lower pressures, the parallel connection will give the greater flow. At the higher pressures the greater flow will



Flow curves same as in Figure 1.

Pump characteristic 1P is for a 12 x 6 x 14 duplex steam pump at full open throttle with boiler pressure of 165 pounds per square inch.

Characteristic 2P is for two such pumps operated with fluid ends in parallel.

Characteristic 2PC is for two such pumps operated with fluid ends in series or compounded.

Relation of Flow Curves to Pump Characteristics

FIGURE 2

be obtained with the series-compounded connection. The curves of the alternating-current-motored pump indicate medium mud rate at low pressures, and a slight decrease in mud rate at higher pressures. The ability to maintain the rate at high pressures depends upon the temperature rise of the motors.

The reaction when the second alternating-current-motored pump is paralleled with the first pump may be illustrated by referring to the curve of 5 9/16-inch drill pipe in Figure 3. With 4120 feet of this drill pipe in a 12-inch hole, a single pump of the dimensions shown will, according to the curve, cause circulation of mud at 38 cubic feet per minute with a pressure of 180 pounds per square inch. Addition of the second pump, in parallel, will cause the flow to change to 67 cubic feet per minute, and the pressure will become 590 pounds per square inch. Hydraulic horsepower in the first case will be 30, and in the second will be 172. The first pump will have diminished its volume from 38 to 33.5 cubic feet per minute.

Parallel operation of mud pumps is employed on low-resistane cementing operations and, at times, when the mud flow with one pump is deemed insufficient for the purpose in hand. Against the flow resistance of 4120 feet of 5 9/16-inch drill pipe, the steam pump of Figure 2 will cause a flow of 49 cubic feet per minute at a pressure of 315 pounds per square inch. With two pumps in parallel, the rate will be 58 cubic feet per minute, and the pressure 450 pounds per square inch. The first pump will diminish its rate to 29 cubic feet per minute when the second pump is added. Sixty-seven hydraulic horsepower will be developed with one pump, and 114 with both pumps when acting against the condition as noted.

Operating conditions will change from time to time and from day to day, as the drilling operations proceed. Each drilling operation will have a certain condition of mud pres-

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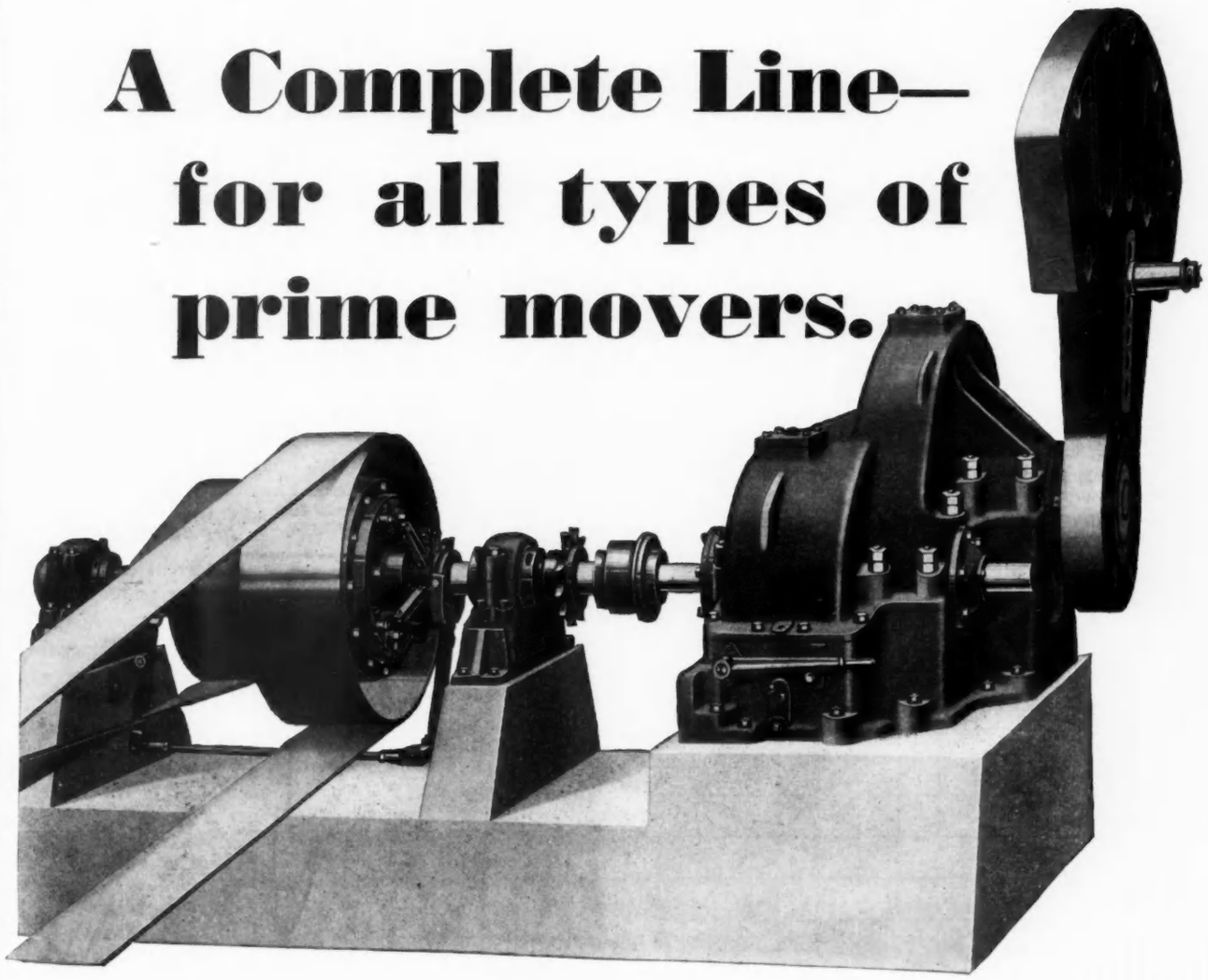

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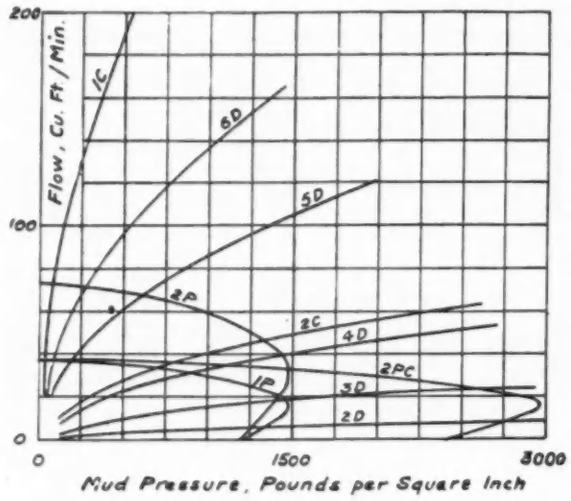


Flow curve same as in Figure 1.

Pump characteristic 1P is for a 12 x 6 x 14 alternating-current electric power-driven pump with 25/65 horsepower motor and 21.6:1 speed ratio.

Characteristic 2P is for two such pumps operated with fluid ends in parallel.

Characteristic 2PC is for two such pumps operated with fluid ends in series or compounded.

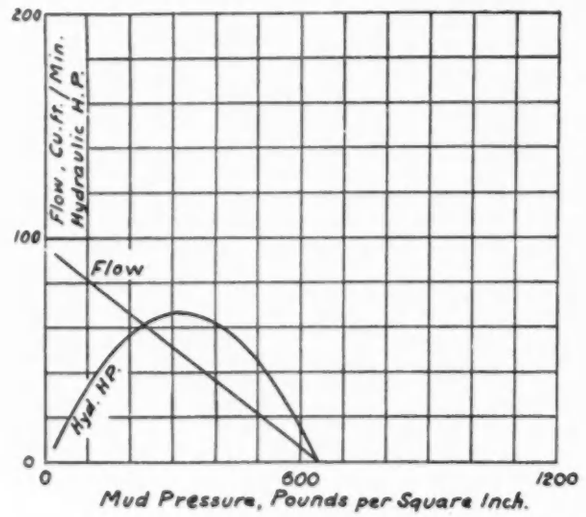
Relation of Flow Curves to Pump Characteristics

FIGURE 3

sure and volume governed by the behavior and arrangement of the pump.

Pump Capacity

The capacity of a pump, expressed in hydraulic horsepower, depends upon the pressure-volume characteristic and is, therefore, dependent on the behavior. Figure 4 illustrates the relation of hydraulic horsepower to the pressure-volume characteristic for a steam pump typical of the slush pumps in common use. The hydraulic horsepower increases from 0 at 0 pressure to a maximum at mid-pressure, diminishing to 0 at maximum pressure, a condition of considerable importance in field work. Throttling is the practice when on the initial part of the curve.



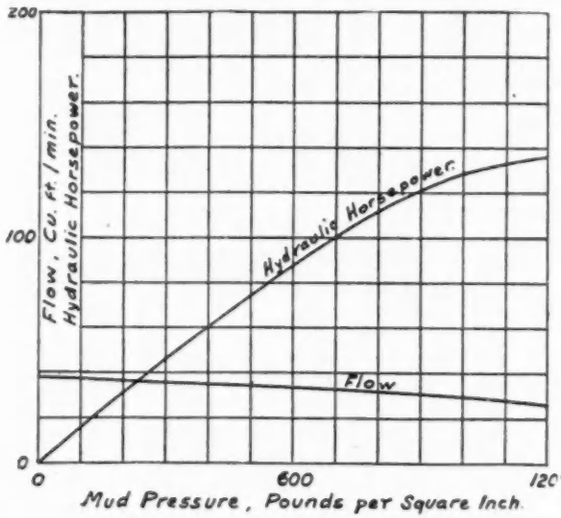
The pump is a 12-x 6 x 14 duplex steam pump at full throttle on 165 pounds per square inch boiler pressure.

Relation of Pump Characteristic to Hydraulic Horsepower

FIGURE 4

At pressures corresponding to the final part of the power curve, the hydraulic horsepower is seen to be low. If operations warrant the change, smaller lines will be installed, causing a new curve of hydraulic horsepower, a new intercept of pressure-volume with flow curve, and a greater utilization of hydraulic horsepower.

Figure 5 illustrates the power curve of an alternating-current-motored pump, at full open throttle, with dimensions and speed ratio as noted. The hydraulic horsepower increases from 0 at 0 pressure, up to and through a point representing the full load capacity of the motor, and on up to the point where the protective devices disconnect the motor from the power circuit, or drop the pressure to a low value. Various types of protective devices are in use, including series trip of the circuit breaker; pressure-gauge actuated contacts to cause series trip; pressure relief valves; pressure-rupturing discs on the mud line.



The pump is a 12 x 6 x 14 alternating-current electric power-driven pump with 25/65 horsepower motor and 21.6 speed ratio.

Relation of Pump Characteristic to Hydraulic Horsepower

FIGURE 5

Conclusion

Study of the relation of pressure-volume characteristics of mud pumps to drilling operations and flow conditions, based upon more complete information, may lead to standards of suitability. Better adaptation of various types of prime mover to secure the best combination of suitability and economy of operation will follow as a natural development. Further tests will enable construction of a set of graphs that will permit predication of the pressure and volume resulting upon application of a given pump to a given drilling condition.

Acknowledgments

This paper is presented through the courtesy of W. L. McLaine, director of production, General Petroleum Corporation of California. Thanks are hereby accorded to those who assisted in its preparation.

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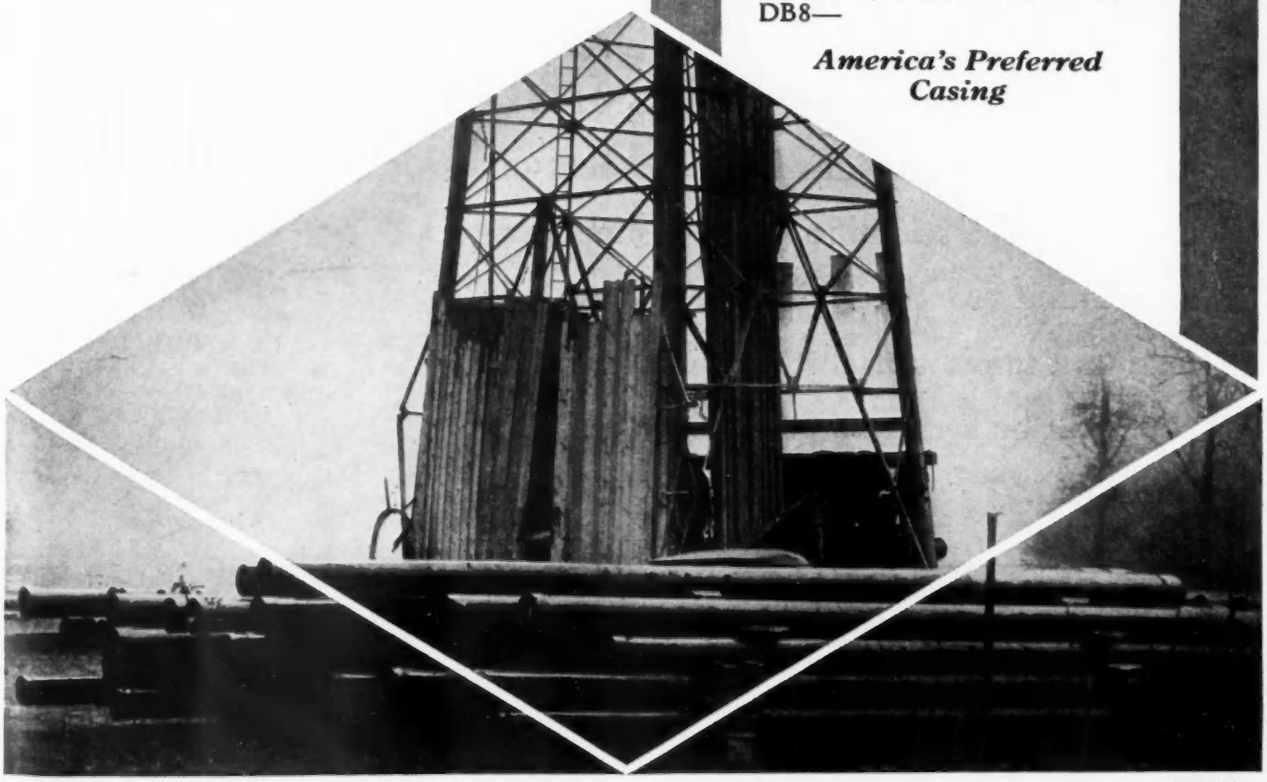

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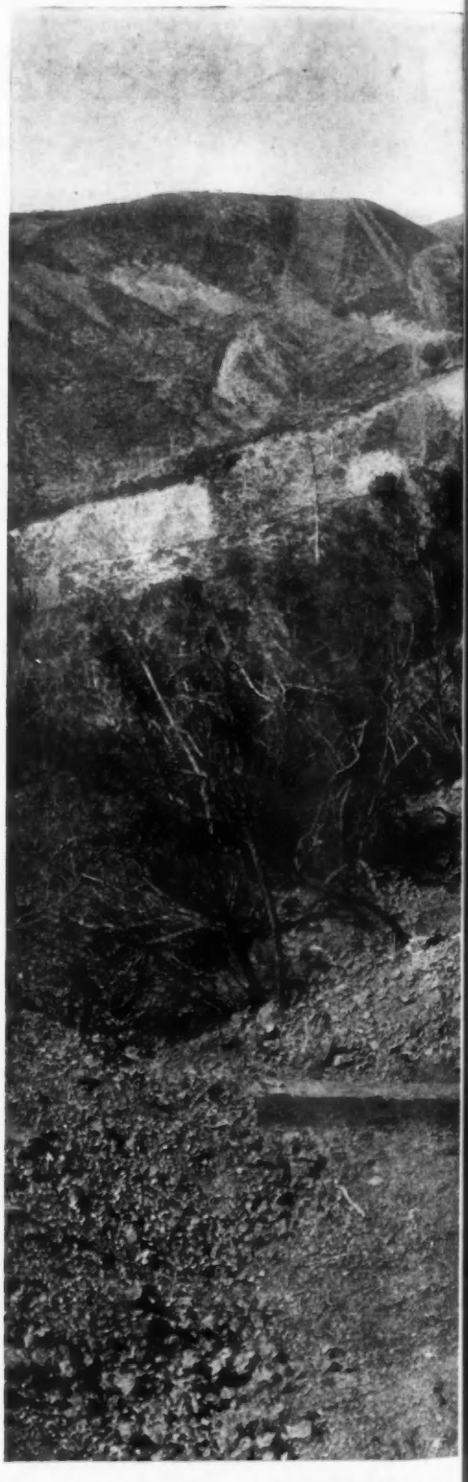

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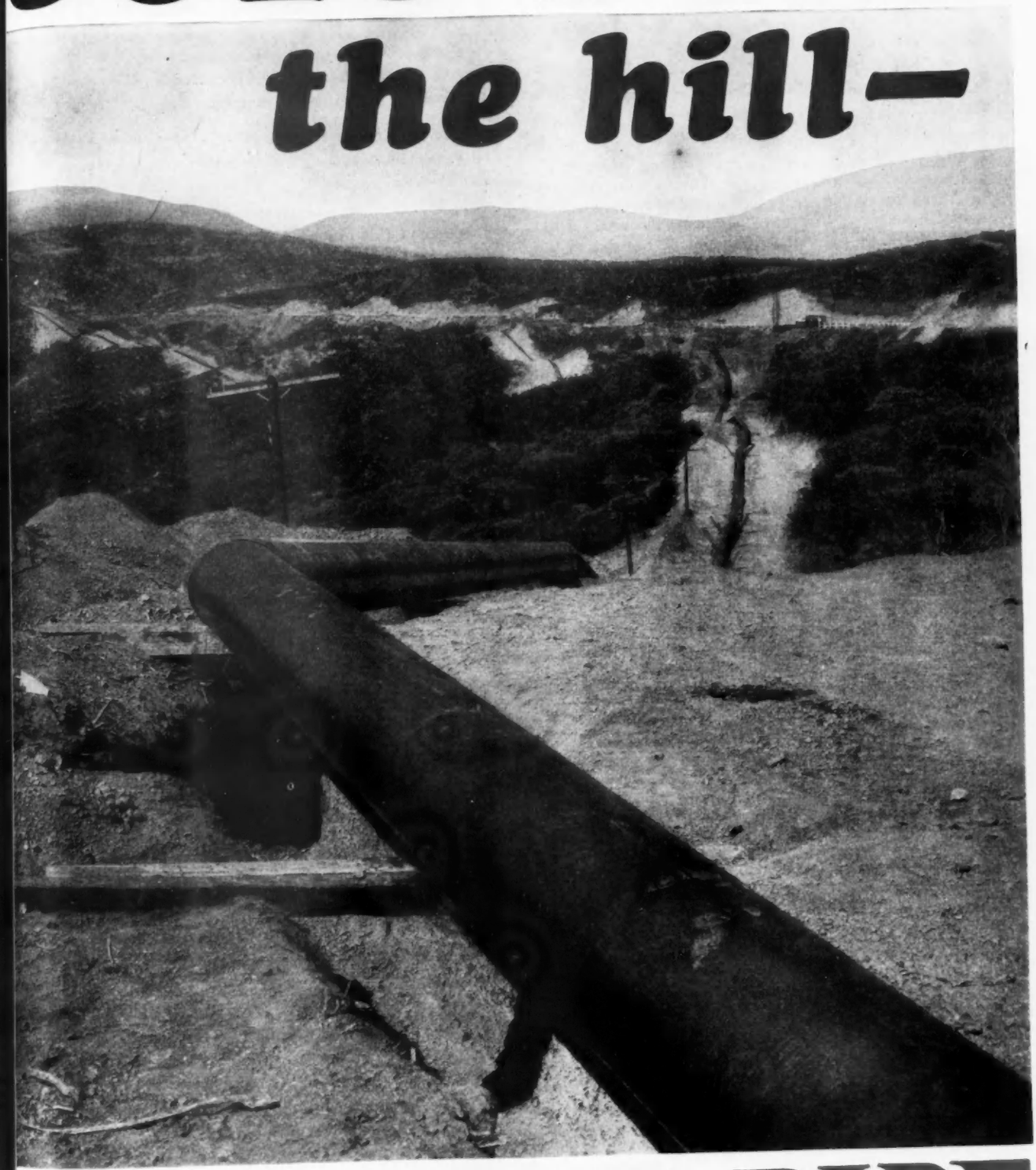


GAS LINE PIPE

LOWEST COST PER MILE

Using Pressure-Drop in Sand to Measure Well Capacities

(*Continued from page* 30)

accurate means by which bottom-hole pressure can be determined. Recently, several successful types of instruments have been developed which may be run in the wells on wire lines. These instruments are, in general, of two types: those recording pressures continuously, in which a chart is moved by means of clock-work; and those in which maximum pressures only are registered. The former type have the great advantage of furnishing a record of bottom-hole pressures throughout the entire period of the test. However, because of the limitations imposed by the size of the clock-work, these instruments are usually too large to be run in wells equipped with small tubing. Successful maximum registering instruments have been built with outside diameters as small as 1⅛ inch. These instruments, however, must be run each time the conditions in the well have changed, if the effect of pressure upon these conditions is to be studied. The development of such instruments is being carried forward, and within the near future devices which incorporate the advantages of both types may be available.

Under favorable conditions, two men can make about four determinations of bottom-hole pressure in a working day. If men are available to install and remove the lubricators through which these instruments are run, thus relieving the man who runs the instrument from this work, it is believed that as many as eight determinations may be made in one day without difficulty. By studying a group of four to eight wells simultaneously, and allowing 24 hours for the conditions to become steady after changing the rate of flow, six points on the curves of bottom-hole pressure vs. production rate for each well in the group may be established in a week. Usually this number of points is sufficient to determine the curve. The labor involved in the collection of the required data is one of the most serious disadvantages of this method.

Conclusions

Advantages of Proposed System

The following advantages of this proposed system may be reviewed:

1. The pressure-drop in the sand furnishes a measure of the capacity of the well which is superior to the open-flow test. However, allowances under this system are not radically different from those given under the open-flow test.

2. Under this proposed system, the size and type of flow strings and surface equipment which the operator may choose to install will have no bearing upon the allowable production of the wells. Hence, efficient and economical equipment may be employed without penalty.

3. By establishing substantially uniform pressure-drops in the sand, the tendency to withdraw oil which underlies one property through wells on neighboring properties will be reduced.

4. The control of the pressure-drops exercised throughout the field will reduce the tendency toward the formation of low-pressure areas and gas channels. There is little doubt that in many instances low-pressure areas are conducive to serious water encroachment.

5. The data required for this system can be taken at rates of flow which need not be much greater than the normal production rate for the well. Inasmuch as serious water encroachment is frequently caused by the open-flow test, this is an important advantage.

Disadvantages of Proposed System

However, in this proposed system there are certain inherent disadvantages:

1. The most important factor which limits the practical application of this proposed method is the labor and time involved in securing the necessary data. It is believed that, with proper organization and adequate equipment, this difficulty can be overcome.

2. A minor disadvantage is the experimental error involved in measuring the bottom-hole pressure. This will be serious only in the case of very large wells, and in any instance these data on bottom-hole pressures can be taken more accurately than can an open-flow gauge.

In proposing that allowable productions under proration can be determined by the methods outlined herein, the authors realize that due to a lack of knowledge of the laws governing the flow of oil and gas in natural reservoirs the ultimate solution to the many problems of proration has not yet been developed. This system is simply suggested as a workable method which is superior to those now employed, and is recommended for use until it in turn is superseded by a better one.

Use of Internal Combustion Engines for Drilling

(*Continued from page* 25)

iary equipment are furnished, the investment is approximately 25 per cent greater than for some of the other types of prime movers of equal capacity.

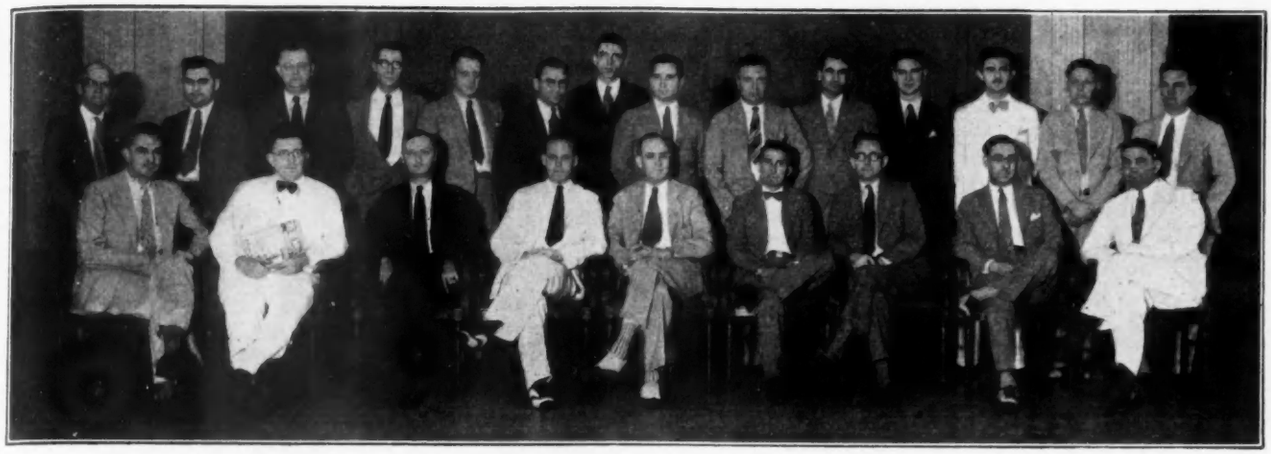
No definite depreciation rate has been established for this type of equipment for rotary drilling, but it will probably be close to that approximated for the gas or gasoline engines.

Conclusion

Faced with problems of drilling wells in wildcat territory, the internal combustion engine, of either type, may be used to distinct advantage.

The main advantage of the internal combustion engine for rotary drilling, from the standpoint of the well owner, is the low cost of fuel and water per foot drilled.

Some of the objections made relative to the high-speed, multi-cylinder, internal combustion engines for rotary drilling are lack of flexibility and limited power. These objections may be overcome by continued use and further development.



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Markets • Production • Crude Prices

H. J. STRUTH, ***Staff Economist, Houston, Texas***

East Texas Breaking General Crude Market

With East Texas production above 350,000 barrels daily during the past week, causing excessive supplies of oil to be thrown upon the market at prices even below 25 cents a barrel, the general crude market structure has reached another critical stage. On June 1, Stanolind Crude Oil Purchasing Company announced a reduction in Mid-Continent crude prices of about 30 cents a barrel, bringing the Mid-Continent scale practically to the level of prices prevailing in East Texas. This announcement was followed on June 2 by Magnolia Petroleum Company, posting a low price of 22 cents a barrel for below 26 gravity oil and a top price of 37 cents for oil of 40 gravity and above in all Oklahoma, Kansas and North Texas fields in which that company purchases. Adoption of the lower scale of prices by Magnolia Petroleum Company probably presages a general downward revision by all major purchasing companies in the Mid-Continent area.

United States crude oil production for the week ending May 30 averaged 2,462,150 barrels daily, an increase over the preceding week of 25,000 barrels daily. Texas, outside of Gulf Coast, reported an increase in daily average production of 53,650 barrels, which represented a gain in East Texas production of 47,150 barrels daily.

Preceding the slash of Mid-Continent crude prices on June 1 to the same level as that posted by major companies in East Texas, a noticeable slump in crude sales was experienced by the numerous companies engaged in making tank car shipments of oil from East Texas. This lull in trading immediately influenced prices of oil at the wells, and producers that have heretofore depended upon brokers for a market found spot sales hard to make even with quotations shaded to 20 cents per barrel. Crude brokers are unable to explain the sudden withdrawal of big buyers from the East Texas crude market, except that possibly the latter anticipated further recession in the price structure, and expect to cover future requirements at their own terms. Recent curbing of outside purchases by Atlantic Refining Company, Stanolind Oil & Gas Company, Sinclair Refining Company, Tidal Refining Company and others served to circumscribe the potential tank car market for East Texas oil, while some of these and other buyers are rapidly gaining control of sufficient production in East Texas to fill their respective requirements.

Inroads made by tank car shippers of crude from East Texas into the natural market outlets of other Mid-Continent fields will be checked somewhat by the equalizing of posted prices. Price advantages heretofore enjoyed by East Texas brokers in making tank car loadings are narrowed down to a level that will result in producers being called upon to make further sacrifices to maintain competition. Violators of proration rules have been the principal source of supply for crude moving out in tank cars at below posted prices, and any appreciable loss of market relief will result in a change in attitude in regard to the merits of proration by this class of operators.

Outside of East Texas the crude supply situation has actually shown further improvement. Production in Oklahoma and California has been reduced to the extent where the excess over allowable output is decidedly small. However, the excess of the United States now stands at 209,850 barrels daily, with East Texas charged with an excess figure of 205,850 barrels. It is seen, therefore, that all other producing territory of the United States outside of East Texas is only responsible for excessive production to the extent of slightly more than 4000 barrels daily. It is apparent from these figures that East Texas has done nothing to prevent over-production and by continued premature development and underselling is undermining the crude market structure of the whole industry. It is anybody's guess now what the crude market will do. That the recent slash in East Texas crude prices will not cure over-production and over-development is evidenced by the fact that many operators there are determined to market their oil at any price. This means that lower prices elsewhere will be met with continued under-selling in East Texas.

The situation in California has reached the stage where efforts to lower the allowable production figure are meeting with approval of most operators. It has been proposed to set the allowable for California at 487,500 barrels and maintain that figure through the balance of this year. It is believed, however, that it will be difficult to bring production down to that figure as drilling now being done at Kettleman Hills will undoubtedly result in increased production there in the near future. At any rate, California has shown material improvement during the past few weeks and if it had not been for the situation which prevails in East Texas, California crude prices might have been given a slight boost at this time. However, with the crude market in its present critical stage, there is little likelihood of an advance anywhere.

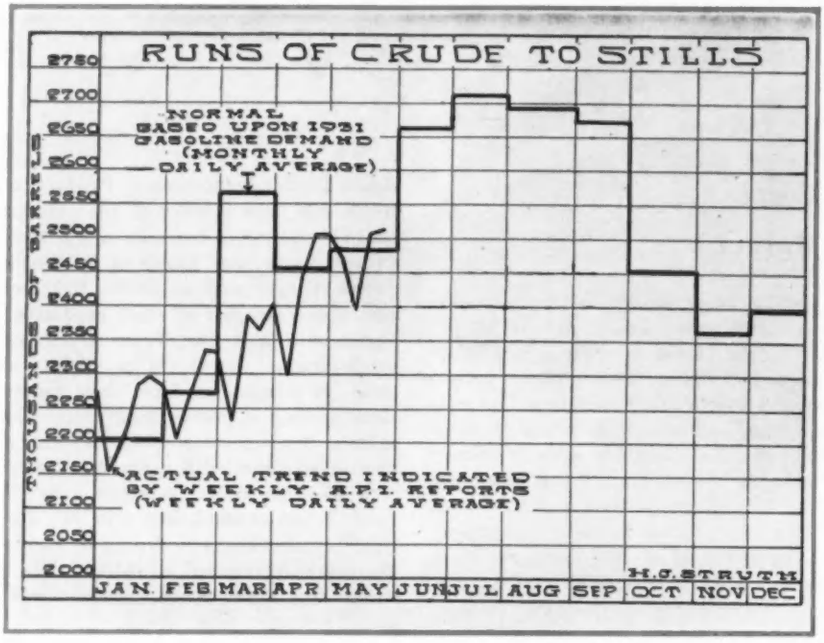
Refinery Gasoline Stocks Decline 650,000 Barrels

Stocks of gasoline reported to the American Petroleum Institute for the week ending May 30, showed a decline under the preceding week of 654,000 barrels. The total reported by refiners was 44,795,000 barrels, against 45,449,000 barrels during the preceding week. This is an encouraging report for the industry, since the decline in gasoline stocks has been accompanied by increasing crude throughput by refineries.

Runs to stills are now at the highest point since January 1, having reached a total for the United States of 2,548,000 barrels daily. The chart shows that producers may expect an increased demand from refiners during June, July and August; a gain in demand that will probably boost the daily average requirement of United States refineries to between 2,650,000 and 2,700,000 barrels. This means that the producer can expect an increase in crude demand next month of about 100,000 barrels daily, with no appreciable slackening in demand until late in September.

With the peak season of crude and gasoline demand at hand,

MARKET SECTION



the industry appears to face a rather sad plight. Other industries are confronted with lagging demand, while the oil industry finds the demand satisfactory but in a position where it must serve the nation's requirements for oil at a dead loss. Despite the depression, the demand for gasoline is exceeding expectations, but the severe competition for gallonage is robbing the industry of its right to operate at a profit. With crude prices at their present low level it is apparent that competitive forces will exact a further toll in the form of still lower gasoline prices. It is said there is a limit to everything, but what the limit for low prices will be for the oil industry is problematical.

Stanolind Cites East Texas In Crude Cut Announcement

Mid-Continent crude oil prices gave way under the strain June 1, when the Stanolind Crude Oil Purchasing Company revised the postings with 25 cents as the low price and 37 cents as the top figure. Although all other purchasers had not met the revision by the close of business that day, the new figure was accepted as the prevailing price for oil in Kansas and Oklahoma.

The reduction in East Texas prices last week, continued

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending May 23, 1931

(Figures in barrels of 42 gallons)

District—	Potential Capacity (Daily) Total	Potential Capacity (Daily) Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per Cent Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	612,700	612,700	100.0	3,395,000	485,000	79.2	8,414,000	8,580,000
Appalachian	141,300	132,500	93.8	640,000	91,400	69.0	1,653,000	1,036,000
Indiana, Illinois, Kentucky	390,800	381,000	97.5	2,357,000	336,700	88.4	6,432,000	3,671,000
Oklahoma, Kansas, Missouri	461,100	412,200	89.4	1,948,000	278,300	67.5	3,664,000	4,225,000
Texas	809,000	743,500	91.9	3,921,000	560,200	75.3	8,154,000	9,583,000
Louisiana-Arkansas	266,600	262,000	98.3	1,121,000	160,100	61.1	2,336,000	2,389,000
Rocky Mountain	150,100	139,700	93.1	422,000	60,300	43.2	1,894,000	853,000
California	898,500	887,600	98.8	3,288,000	469,700	52.9	*12,902,000	98,218,000
Total Week May 23	3,730,100	3,571,200	95.7	17,092,000	2,441,700	68.4	45,449,000	128,555,000
Total Week May 16	3,730,100	3,571,200	95.7	17,039,000	2,434,000	68.2	45,663,000	***128,484,000
Total May 24, 1930	3,678,900	3,521,900	95.7	18,112,000	2,587,400	73.5	**52,727,000	**137,178,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included Above in the Totals of their Respective districts.								
Texas Gulf Coast	529,500	529,500	100.0	2,936,000	419,400	79.2	7,011,000	6,795,000
Louisiana Gulf Coast	147,500	147,500	100.0	734,000	104,900	71.2	2,198,000	1,467,000

NOTE: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

**Revised due to change in California.

***Revised due to addition in California of 2,840,000 barrels of fuel oil stocks not reported last week.

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Second Quarter 1931	Economic Limit Second Quarter 1931	Daily Average Last week	Daily Excess Last week	Daily Average Since Jan. 1	Daily Excess Since Jan. 1†
Arkansas	58,600	56,000	46,250	—9,750	48,359	—5,641
California	591,500	500,000*	528,400	28,400	530,607	30,607
Kansas	118,300	114,000	106,800	—7,200	109,534	34
Louisiana	78,900	71,000	68,500	—2,500	68,658	—2,342
Oklahoma	551,000	505,000*	527,700	22,700	512,779	27,779
Texas	798,700	767,000*	972,850	205,850	778,736	114,736
Balance of U. S.	254,000	240,000	211,650	—28,350	207,430	—25,070
Total	2,451,000	2,253,000	2,462,150	209,150	2,256,113	140,113

*Allowable.
†Excess based upon average allowable to date.

selling under posted figures and the over-production of crude oil generally were given as the reasons for this move. R. S. Ellison, president of Stanolind Crude Oil Purchasing Company, gave out the following statement along with the lower prices:

"During the past week purchasers of East Texas crude reduced their posted prices 30 cents per barrel, bringing 40 gravity crude down to 37 cents per barrel. Approximately 400,000 barrels of crude per day is now being sold throughout the Mid-Continent field, including East Texas, at about half what we have been paying. High gravity crude is being freely offered in East Texas today at less than 20 cents per barrel.

"We can not go on paying more for our raw material than is paid by our competitors. There can not be one price for them and another for us. Economic law rules alike the producer of crude and the marketer of gasoline. Existing low prices are the result of current over-production and in our opinion will continue until that over-production ceases. We will gladly pay bet-

Cracked Gasoline Production

Week Ending May 23, 1931

(Barrels of 42 gallons)

District	Potential Total	Charging Reporting	Capacity Per Cent	Production Total	Production Daily Average
East Coast	246,900	222,900	90.3	621,000	88,700
Appalachian	45,900	43,400	94.6	141,000	20,100
Ind., Ill., Ky.	294,200	280,200	95.2	639,000	91,300
Okla., Kans., Mo.	219,900	197,900	90.0	436,000	62,300
Texas	395,500	379,400	95.9	873,000	124,700
Louisiana-Arkansas	109,400	106,900	97.7	218,000	31,100
Rocky Mountain	95,100	95,100	100.0	112,000	16,000
California	182,700	182,700	100.0	295,000	42,200
Total week May 23.	1,589,600	1,508,500	94.9	3,335,000	476,400
Total week May 16.	1,589,600	1,508,500	94.9	3,194,000	456,300
Total May 24, 1930			Not Available		
The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.					
Texas Gulf Coast	305,000	300,500	98.5	693,000	99,000
Louisiana G. Coast	77,000	77,000	100.0	157,000	22,400

Imports of Petroleum

(Barrels of 42 gallons)

	Week Ended May 23	Week Ended May 16
AT ATLANTIC COAST PORTS—		
Baltimore	194,000	152,000
Boston	.....	101,000
New York	728,000	"A" 873,000
Philadelphia	165,000	98,000
Others	244,000	133,000.
Total	1,331,000	1,357,000
Daily Average	190,143	193,857
AT GULF COAST PORTS—		
Galveston District	.....	.....
New Orleans and Baton Rouge	.....	.....
Port Arthur and Sabine District	.....	.....
Tampa	.....	.....
Total	.....	.....
Daily Average	.....	.....
AT ALL UNITED STATES PORTS—		
Total	1,331,000	1,357,000
Daily Average	19,143	193,857
Daily Average Four Weeks Ended	208,929	206,500
Distribution of Total Imports Is As Folows:		
Crude	729,000	"A" 1,108,000
Gasoline	262,000	65,000
Fuel Oil	340,000	184,000
Total	1,331,000	1,357,000

"A"—Revised.

MNCrude..

California Oil Receipts

(Barrels of 42 gallons)

	Week Ended May 23	Week Ended May 16
AT ATLANTIC COAST PORTS—		
Baltimore	.....	.....
Boston	.....	.....
New York	287,000	210,000
Philadelphia	114,000	117,000
Others	.....	144,000
Total	401,000	471,000
Daily	57,286	67,286
AT GULF COAST PORTS—		
Total	.....	73,000
AT ATLANTIC AND GULF COAST PORTS—		
Total	401,000	544,000
Daily Average	57,286	77,714
Daily Average Four Weeks Ended	55,393	63,071
Distribution of Total California Oil Receipts Is As Follows:		
AT ATLANTIC COAST PORTS—		
Gasoline	306,000	471,000
Fuel Oil	95,000	.....
Total	401,000	471,000
AT GULF COAST PORTS—		
Gasoline	.....	73,000
Total	.....	73,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,700	2,576,250	77,018,100
May	663,300	131,000	662,350	203,900	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May 2	551,050	107,400	804,500	190,050	39,050	46,850	111,700	98,000	526,500	2,475,100	17,325,700
May 9	607,850	108,600	734,100	188,700	39,800	46,950	112,350	92,050	538,300	2,468,700	17,280,900
May 16	574,050	107,800	725,750	187,300	39,800	46,750	110,550	98,800	536,000	2,426,800	16,987,200
May 23	542,700	106,550	768,700	187,250	38,900	46,650	111,300	98,400	536,700	2,437,150	17,060,050
May 30	527,700	106,800	822,350	180,400	38,600	46,250	111,000	100,650	528,400	2,462,150	17,235,050
Increase	.....	250	53,650	.....	.....	.....	.....	2,250	.....	25,000	175,000
Decrease	15,000	.....	.....	6,850	300	400	300	.....	8,300	.....	.....

Last Week's Daily Average Production by Districts

TEXAS	May 30	May 23
Panhandle District	61,800	59,250
North Texas	56,500	55,750
West Central Texas	26,400	25,800
West Texas	210,600	211,100
East Central Texas	55,600	53,400
East Texas	350,900	303,750
Southwest Texas	60,550	59,650
Texas Gulf Coast	150,500	156,450
Total Texas	972,850	925,150
OKLAHOMA	527,700	542,700
CALIFORNIA	528,400	536,700
KANSAS	106,800	106,550

LOUISIANA	May 30	May 23
North Louisiana	38,600	38,900
Louisiana Gulf Coast	29,900	30,800
Total Louisiana	68,500	69,700
ARKANSAS	46,250	46,650
MOUNTAIN STATES		
Wyoming	42,250	42,950
Montana	8,650	8,100
Colorado	4,050	3,950
New Mexico	45,700	43,400
Total Mountain States	100,650	98,400
EASTERN STATES	111,000	111,300
TOTAL UNITED STATES	2,462,150	2,437,150

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	4	4	1	2	..	..	3	2	268	30
California	8	..	7	..	..	..	1	..	17,210	.....
Indiana	4	9	1	..	..	4	3	5	50	.....
Kansas	5	11	2	6	2	1	1	4	4,055	8,160
Kentucky	4	3	1	..	1	1	2	2	35	.....
Louisiana	7	6	..	3	1	1	6	2	.....	2,560
Michigan	2	3	..	1	..	..	2	2	.....	2
Mississippi	1	2	..	..	1	..	..	2	.....	.....
New York	22	5	..	..	22	5	..	..	.....	.....
Tennessee	..	3	..	..	..	..	..	3	.....	.....
Ohio	24	7	4	2	16	3	4	2	90	65
Oklahoma	13	20	3	6	6	2	4	12	5,245	5,162
Pennsylvania	4	..	..	..	3	..	1	..	.....	.....
Texas	142	132	122	84	3	13	17	35	800,113	556,191
West Virginia	6	9	1	2	5	6	..	1	25	7
Total	246	214	142	106	60	39	44	69	827,091	572,177
Increase this week	32	..	36	..	21	..	..	..	254,914	.....
Decrease this week	..	..	..	..	..	..	25	..	.....	.....

Comparison of Permits Granted for New Wells

State—	Week Ending May 30	Previous week	This week 1930	Total this month	This month 1930	Total this year	Total this date last year	1930 year total
Arkansas	..	3	1	6	12	23	49	108
California	30	..	21	70	89	195	330	922
Louisiana	12	9	25	46	119	158	472	948
Kansas	11	9	26	52	139	210	459	944
Oklahoma	14	16	81	70	400	457	1,387	2,830
Texas	*201	199	193	737	929	2,433	3,415	7,052
Total	268	236	347	981	1,688	3,476	6,112	12,804

*—Rusk and Gregg Counties—137.

MARKET SECTION

ter prices for crude the moment that economic conditions in the industry warrant our taking such a step."

The June 1 price reduction was the second of the year. March 5, prices were reduced from a top price of $1.07 for crude oil of 40 degrees and above, down to 67 cents for this grade. The present price of 37 cents for oil of this grade marks one of the low price levels of the history of the American petroleum industry.

Added to the price reduction is the slackening in demand for Oklahoma crude oil, as indicated by nominations of purchasing concerns in the hearing before the Oklahoma Corporation Commission last week. These buyers made nominations for the next four months showing an average daily demand of 155,000 barrels daily. Proration figures had been set for an output of 165,000 barrels daily for Oklahoma City.

For Oklahoma fields other than Oklahoma City, Chandler, Asher-Wanette and West Seminole, the rate of production for June will be three per cent under May potentials. Ray M. Collins, umpire for the state, made this last week.

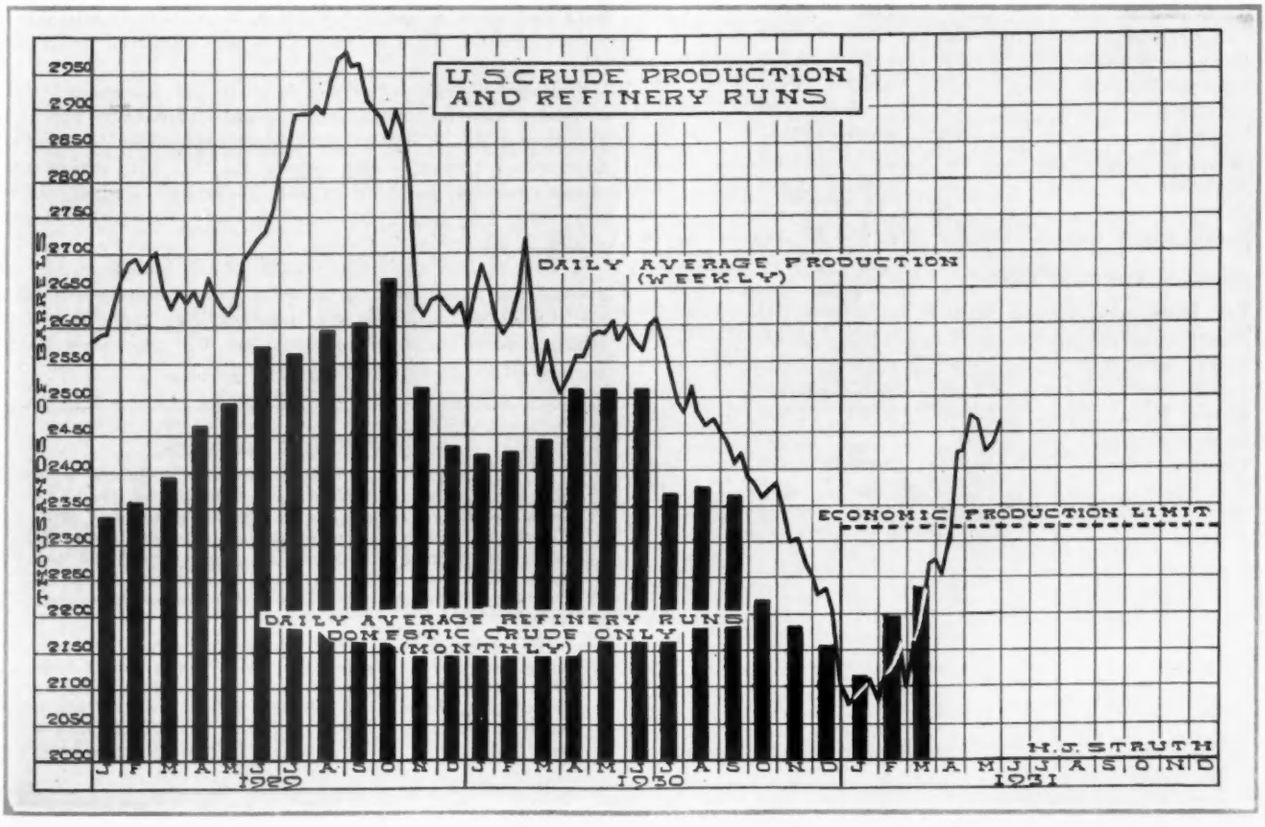
The price of gasoline in tank cars gives every evidence of yielding in response to the last reduction in crude oil prices. Gasoline of U. S. motor grade is selling at 2½ and 2¾ cents per gallon. It is feared that this gasoline may reach the two-cent level.

El Dorado, Arkansas.—Having completed delivery of 50,000 barrels of East Texas crude to the Root Refining Company here for use in its local refinery, Atlas Pipe Line Company, during the past week, started delivery of East Texas crude to Kettle Creek Refining Company here. It is also reported that the pipe line will also soon start bringing East Texas crude here for the Ouachita Valley Refining Company. The oil is being brought to Shreveport by the Atlas Pipe Line Company's new eight-inch 57-mile line from Longview and being relayed through its older line from Shreveport to El Dorado.

Mid-Continent Break Slows Oil Movement Through Canal

Unfavorable Mid-Continent developments and dissension among major marketers prevented an upward revision of both crude and gasoline prices in California over the week-end. The low gasoline prices which are based on prevailing crude quotations are causing marketers much worry and producers and marketers alike are anxious to establish an average light crude price of about 75 cents and a retail gasoline price of around 16 cents.

Continued weakness in the Mid-Continent market makes an upward revision in California seem out of line, but it is known that independent producers have been bargaining with major purchasers with a higher crude schedule the principal objective. Principal integrated companies are losing money on gasoline sales and they are as anxious as the smaller companies to see higher crude and gasoline quotations. Such prices will be difficult to establish in view of the extremely low Mid-Continent quotations. A more determined effort is being made to reduce California production to some point below 500,000 barrels. Kettleman Hills is potentially a very dangerous field and the output will grow rapidly. California products, both crude and refined, are netting back record low prices. Increased distribution of East Texas crude is indirectly affecting Canal shipments from the West.



MARKET SECTION

California Moving to Make State Total 427,500 Barrels

Los Angeles.—Various steps have been taken in California to start the oil industry on its way upward, with a plan for bringing the state total to 427,500 barrels, exclusive of Kettleman Hills, commanding most attention. An unofficial allowable of 60,000 barrels for Kettleman Hills will bring the new state allotment to 487,500 barrels, this figure to prevail at least until January 1, 1932.

Under the new trial schedule, which was to go in effect on June 1, potentials and allotments for all fields except Kettleman Hills were given. The fields were divided into "fixed allotment fields" and "variable allotment fields," the proposed allotments for fixed fields representing an average reduction of about 10 per cent from the current allotments except for fields where an additional reduction is considered practicable or where an additional curtailment will be difficult or impossible. The proposed allotments for the variable fields represent a proration on the basis of the approved potentials of the total amount of 222,500 barrels per day available for all variable fields. Average curtailment of fixed fields is 58.35 per cent, and of the variable fields it is 57.45 per cent.

The statewide committee of oil operators passed a resolution that the 427,500-barrel allotment, exclusive of Kettleman Hills, be adopted, on the assumption that the field in question will hold its output to 60,000 barrels daily, and that a ready market will be provided for oil produced under the allotment.

Trial Schedule of Proposed Allotments For California Fields

	Approved May Potential	Current Allotment	Proposed Allotment		Difference
Fixed Allotment Fields—					
Belridge	8,950	4,000	6,500	+	2,500
Brea-Olinda	23,670	10,600	9,500	—	1,100
Capitan	1,200	.....	.....		....
Coalinga	33,510	8,900	8,000	—	900
Dominguez	17,745	11,500	11,500		....
East Coyote	3,730	1,600	1,450	—	150
Elwood	98,800	29,000	26,000	—	3,000
Fruitvale	7,830	2,500	2,250	—	250
Inglewood	21,850	16,000	14,400	—	1,600
Kern River	11,500	2,750	2,500	—	250
Lawndale	300	300	300		....
Los Angeles	1,500	1,500	1,350	—	150
Lost Hills	6,500	350	2,100	+	1,750
McKittrick	4,500	3,600	2,500	—	1,100
Midway-Maricopa	98,875	55,800	52,500	—	3,300
Montebello	8,850	7,200	6,500	—	700
Round Mountain	13,000	1,600	1,200	—	400
Santa Maria	11,975	2,500	2,250	—	250
Summerland	250	250	250		....
Ventura Avenue	97,270	44,500	40,000	—	4,500
Ventura-Newhall	5,970	3,900	3,500	—	400
Watsonville	60	60	50	—	10
West Coyote	12,400	8,500	8,500		....
Wheeler Ridge	590	590	550	—	40
Whittier	1,425	1,250	1,350	+	100
Fixed field total	492,250	218,750	205,000	—	13,750
Variable Allotment Fields:					
Elk Hills	28,760	13,500	12,200	—	1,300
Huntington Beach	42,980	20,500	18,300	—	2,200
Kern Front	18,200	8,800	7,700	—	1,100
Long Beach	179,775	89,350	76,500	—	12,850
Mount Poso	20,900	8,500	8,900	+	400
New Fields	300	.....	100	+	100
Playa Del Rey	37,875	19,000	16,100	—	2,900
Potrero	1,250	625	550	—	75
Richfield	14,835	7,050	6,300	—	750
Rincon	3,030	1,300	1,300		....
Rosecrans	7,775	3,700	3,350	—	350
Santa Barbara	525	150	200	+	50
Santa Fe Springs	129 225	61,850	55,000	—	6,850
Seal Beach	24,970	15,925	10,600	—	5,325
Torrance	12,600	6,000	5,400	—	600
Variable field total	523,000	256,250	222,500	—	33,750
State Total (ex Kettleman Hills)	1,015,250	475,000	427,500	—	47,500

Kettleman Hills 60,000 Barrels

The Kettleman Hills curtailment plan calls for a production of 60,000 barrels daily, with Standard Oil Company to produce about 25,000 barrels, the Kettleman North Dome Association about 25,000 barrels and the smaller fee land operators around 10,000 barrels during the remainder of the year. With several wells to be completed within two months and with the fee operators already producing far more than their tentative allotment, there is doubt whether the 60,000-barrel total will be held. The field is considered by far the most dangerous in the state and eagerness to develop holdings is to be expected. Failure of certain fee land operators to enter the unit plan of development will force a greater field activity than was expected under the plan.

The Oil Producers Sales Agency has announced that progress is being made toward price stabilization and that enrollment of all independent producers might lead to an adjustment upward. The agency has met with major purchasers and has been led to believe that strict adherence to the state allotment will pave the way for higher crude prices in all fields.

A commodity exchange which would include crude oil among the items dealt in is being considered by interests not identified with the oil industry, but there is doubt whether such plans will materialize. The exchange would handle all kinds of California products.

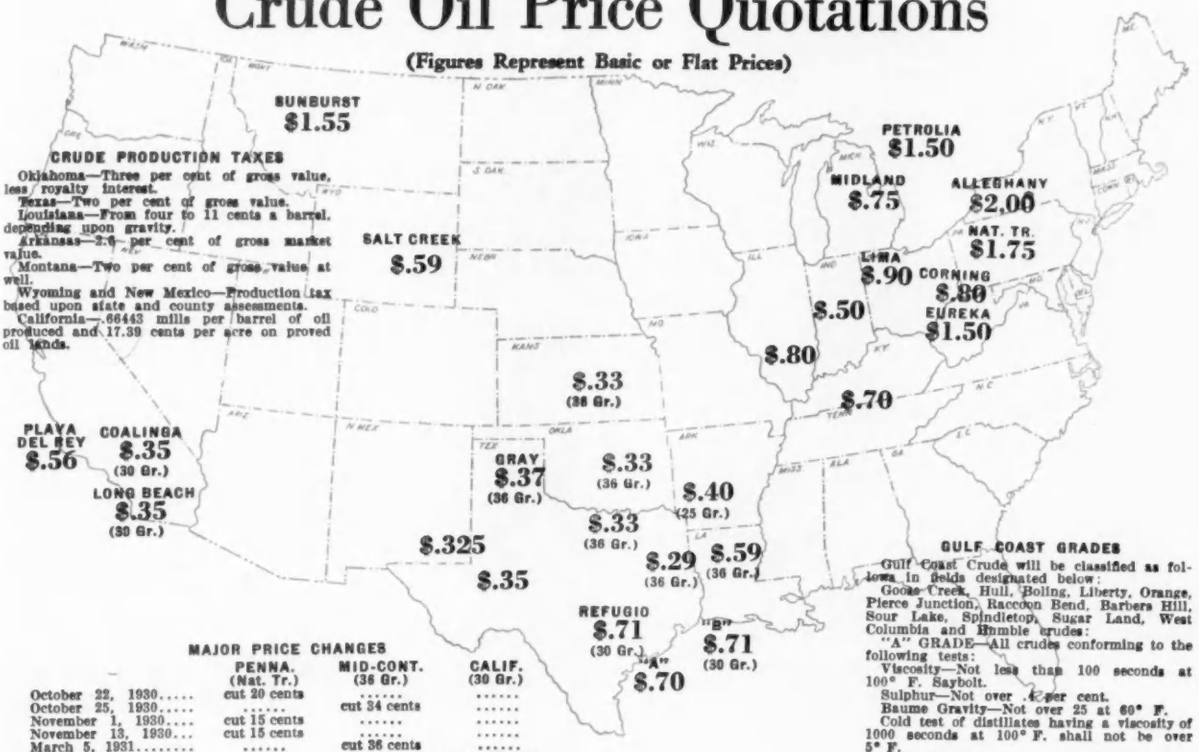
CRUDE PRICE CHANGES

Effective June 1, 1931, Stanolind Crude Oil Purchasing Company initiated a reduction of from 18 cents to 30 cents per barrel for all grades of Mid-Continent crude. This makes the bottom price 25 cents per barrel for below 29 gravity and the top price 37 cents for 40 gravity and above. Sinclair Refining Company met this reduction on the same date.

Effective June 2, 1931, Magnolia Petroleum Company met reduced prices posted by Stanolind Crude Oil Purchasing Company, posting for all grades of Oklahoma, Kansas and North Texas crude a minimum price of 22 cents or below 26 gravity and a maximum price of 37 cents or 40 gravity and above.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (30 Gr.)
October 22, 1930.....	cut 20 cents	.....	.....
October 25, 1930.....	.....	cut 34 cents	.....
November 1, 1930....	cut 15 cents	.....	.....
November 13, 1930...	cut 15 cents	.....	.....
March 5, 1931.....	.....	cut 36 cents	.....
March 30, 1931.....	.....	.....	cut to 35 cents
April 23, 1931.....	cut 10 cents	.....	.....
June 1, 1931.....	.....	cut 30 cents	.....

GULF COAST GRADES

Gulf Coast Crude will be classified as follows in fields designated below:

Goose Creek, Hull, Boling, Liberty, Orange, Pierce Junction, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugar Land, West Columbia and Humble crudes:

"A" GRADE—All crudes conforming to the following tests:

Viscosity—Not less than 100 seconds at 100° F. Saybolt.

Sulphur—Not over .4 per cent.

Baume Gravity—Not over 25 at 60° F.

Cold test of distillates having a viscosity of 1000 seconds at 100° F. shall not be over 5° F.

"B" GRADE—All Coastal crude which does not meet the test for "A" grade.

Official Postings and Differentials

(Revised to June 2, 1931)

California: (Prices effective March 30).

In all **Los Angeles Basin** fields (except Playa del Rey) oil from 14 gravity to 20.9 gravity is 65 cents. Deduct 3 cents for each degree up the scale to 30.9, making this the lowest at 35 cents. Fields in this group include **Alamitos Heights, Long Beach, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs, Montebello, Huntington Beach, East Coyote, Richfield and Brea-Olinda.**

Playa Del Rey: 56 cents flat, 20-26 gr.

In the **San Joaquin Valley** fields, 11 to 11.9 gravity crude is 50 cents per barrel, 14 to 14.9 gravity, 55 cents. Differential of 2 cents off each degree up the scale makes 30 gravity and above 35 cents per barrel. Fields in this group include **Coalinga, McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills and Lost Hills.**

Santa Paula 14 to 19.9 gravity, 60 cents; 20 gravity, 58 cents; 21 gravity, 56 cents, and take off 3 cents for each degree up to and including 28 gravity. **Orcutt** 14 to 19.9 gravity, 55 cents, and take off 2 cents for each degree up to and including 29 gravity which is 35 cents.

Oklahoma-Kansas-North Texas: (Effective June 2, 1931). Below 29 gravity 25 cents with differential of 1 cent to 40 and above. Magnolia Petroleum Company posts 22 cents for below 26 gravity with differential of 1 cent to 40 and above. North Texas posting applies to oil produced in **Wichita, Wilbarger, Archer, Northern Young, Van Zandt, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie.**

Ranger, North Texas, Moran and Cook County oil: Below 29 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 57 cents a barrel.

Texas Panhandle: (Effective April 21, 1931).

Gray County: Below 35 gravity, 33 cents with differential of 2 cents for each degree to 40 and above which is posted at 45 cents a barrel.

Carson-Hutchinson Counties: Below 35 gravity, 30 cents with differential of 2 cents for each degree to 40 and above which is posted at 42 cents a barrel.

East Texas: (Effective May 26). Below 35 gravity, 25 cents with differential of 2 cents each degree to 40 and above which is posted at 37 cents.

West Texas and New Mexico: (Effective April 21, 1931).

Winkler and Pecos County, Texas: Flat price of 35 cents a barrel. **Crane, Upton, Crockett, Ector, Howard, Glasscock**—30 cents a barrel.

Lea County, New Mexico: flat price of 32.5 cents a barrel.

Southwest Texas: (Effective April 21, 1931).

Refugio Heavy: Below 25 gravity 60 cents a barrel. **Refugio Light:** 25-25.9 gravity 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **Mirando Crude:** 60 cents. **Salt Flat:** 53 cents. **Darst Creek:** 53 cents. **Pettus:** 75 cents. **Luling:** 38 cents; **Corsicana Heavy** 38 cents.

Gulf Coast: (Effective April 21, 1931).

Grade "A": 70 cents a barrel. **Grade "B":** Below 25 gravity 60 cents a barrel; 25-25.9, 61 cents with differential of 2 cents for each degree to 35 and above which is posted at 81 cents a barrel. **High Island, 75 cents; Jennings, 80 cents; Markham, 50 cents.**

North Louisiana and Arkansas.

Pine Island, Haynesville, Bull Bayou, El Dorado, Cotton Valley, Zwolle: Below 29, 43 cents with differential of 2 cents to 40 and above. Magnolia Petroleum Company posts 40 cents for below 26 gravity with 1 cent differential to 29 gravity, 43 cents. From 29 to 40 and above, same schedule as foregoing. **Stephens:** Below 29, 54 cents with differential of 4 cents to 32 and above. **Smackover, 45 cents; El Dorado east field 70 cents; Bellevue, 45 cents.**

Rocky Mountain States. (Effective Mar. 10, 1931).

Salt Creek: 29-29.9 gravity 45 cents with differential of 2 cents to 37 and above. **Elk Basin and Grass Creek, 90 cents; Big Muddy, 65 cents; Lance Creek, 98 cents; Rock Creek 66 cents; Mule Creek, $1.20; Rex Lake, $1.10; Osage, 50 cents; Cat Creek, $1.25; Pondera, $1.45; Sunburst, $1.55; Hogback, N. M., $1.40.**

Eastern States. (Effective Mar. 10, 1931).

Bradford, Allegany district, $2.15; **National Transit oil, $1.75;** Southwest Pennsylvania oil, $1.60; **Eureka P. L. (W. Va.) $1.50;** Buckeye P. L. oil, $1.25; Corning crude, $1.15; Somerset in Eureka Lines, 75 cents; **Ragland, 60 cents; Oil City, Ky., 70 cents.**

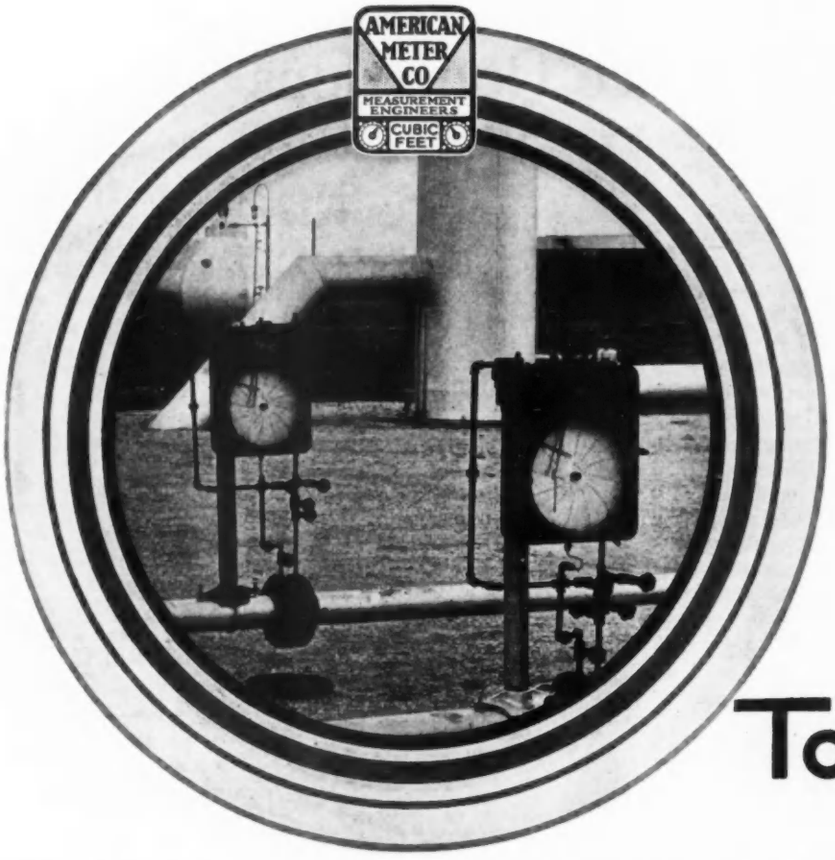
Michigan—Midland, $1.10; Muskegon, below 29 gravity, 65 cents with differential of 4 cents to 35 gravity; 31-31.9, 92 cents with 3 cent differential to 44 gravity and above.

Central States: (Effective March 5, 1931).

Wooster, 99 cents; Lima, 90 cents; Waterloo, $1.20; Indiana, 50 cents; **Princeton, 80 cents; Illinois, 80 cents; Western Kentucky, 75 cents.**

Canada: (Effective October 28, 1930).

Petrolia, $1.50; Oil Springs, $1.57.



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(*Continued from page 22*)

It is argued that since the agreement that might thus be permitted upon enactment of legislation by congress would be subject to a time limit, there would be less opposition than were it to be proposed that there should be a general waiver of the antitrust statutes in favor of the natural resources industries. Any measure which permits combinations to restrain production permanently seems to lead to the necessity of governmental supervision of the combination, warned Mr. Mitchell, and that, he added, is a dubious proposal; with it would go governmental fixing of prices in the various stages of distribution.

Price Equalization Causes East Texas Change of Heart

Fort Worth, Texas.—Slashing of prices on crude produced in all fields in the Southwest to a par level, or below the posted in East Texas disturbing areas, reverses the tables on proration violators in the latter district. Brokers of East Texas crude at sacrifice prices will continue to carry on but on a more restricted basis by reason of more direct competition from older fields for markets. A sharp slump in tank car sales of East Texas crude in spot quantities and also on future deliveries became evident the middle of last week, and an inactive crude market continued into the current week. These unexpected developments have further demoralized East Texas operators, and 38 to 40 gravity oil is now available in large quantities at 20 cents and less per barrel at the well for prompt shipments.

Possibility of further price recessions in East Texas is causing some of the principal violators of proration to suffer a change of heart, and voluntarily fall back in line on proration. Local opposition to proration rules of the Texas Railroad Commission is rapidly disappearing, and the followers of Carl Estes, Tyler newspaper editor, who has led the fight against any organized effort to promote an orderly development campaign in East Texas, are beginning to desert ranks and appeal for state relief.

Even though East Texas operators go back to an orderly program of producing oil under the influence of the present demoralized market situation, there are many that will break ranks as soon as the opportunity again presents itself, and there is no permanent cure until the state arms itself with police power to cope with such situations. In the meantime most operators in old settled fields are inclined to favor seeing the East Texas group proceed with with their program of killing the flush life of the field as soon as possible. All old fields are doomed to experience low crude prices until the East Texas market threat is removed.

Tyler, Texas.—Proration rules of the Texas Railroad Commission in regard to the restriction of production in East Texas were pronounced a failure by the central proration advisory committee, which met here May 29 for the purpose of studying conditions. Chas. F. Roeser, Fort Worth, chairman of the committee presided at the meeting. Recommendations were made to the commission that the allowable production be boosted from 160,000 to between 175,000 and 200,000 barrels daily, and also that drastic action be taken toward forcing proration violators back in line on production quotas.

Propose Proration Control Through Railroad Regulation

Austin, Texas.—The most drastic move which has been officially considered by state officials in handling the East Texas oil situation was proposed here Tuesday afternoon, June 2, at a conference held in the office of Governor Ross S. Sterling, and attended by Attorney General Allred and members of the Texas Railroad Commission.

The plan is to have the railroad commission issue an order commanding the railroads operating in East Texas to refuse to transport any oil produced in violation of commission orders issued for the prevention of waste.

The comimssion has asked Allred for an opinion on the validity of such an order, and he has promised to furnish this at the earliest date possible. Consummation of this plan would mean the immediate shutting in of the oil produced in excess of the allowable under proration rules, as only a small portion of the East Texas crude is being run through pipe lines, the pipe line companies having repeatedly refused to connect to leases whose operators would not prorate.

Governor Sterling has heartily endorsed this plan and has urged its adoption immediately. The law specifically allows such action in the case of the operation of pipe lines, but nothing has been said in them concerning the railways. The latter, however, are common carriers, and on the facts as they have been presented at the present time, it appears that the proposed plan is feasible.

Austin Court Sets Four Proration Suits June 10

Austin, Texas.—Four suits attacking the legality of proration orders of the Railroad Commission of Texas have been set for trial in the Ninety-Eighth District Court on June 10. They are those which were filed by Central Pipe Line Company, R. G. McIntyre Drilling Company, Inland Waterways Pipe Line Company, and Lide-Rowe Oil Company, producers in the new East Texas field.

The already large list of East Texas operators attacking the proration efforts of the Railroad Commission of Texas was further increased June 2 through filing of a suit against the commission by K. E. Merren, and of another, filed by Jenkins Oil Corporation and Consolidated Oil Company against the railroad commission, East Texas proration umpires, and the Atlas Pipe Line Company. These are East Texas producers with combined daily potential of 50,000 barrels from total leases of 94 acres.

Pampa, Texas.—Collection of penalties, amounting to $1000 per day, is to be attempted by the Texas Railroad Commission through the attorney general's office for alleged violation of proration rules in the Texas Panhandle district by three concerns. British-American Oil Producing Company of Toronto, Canada, and Tulsa, Oklahoma, has been named as defendant in a suit for collection of a daily penalty since November 1, 1930. Champlin Refining Company, Enid, Oklahoma, is charged with having been a violator since October 1, 1930, and Wilcox Oil & Gas Company since September 1, 1930. Danciger Oil & Refining Company and Sunray Oil Company and allied interests obtained injunctions to get relief from proration last fall, and are exempt from the penalties.

Petroleum Demand Exceeds Supply in April

Washington, D. C.—According to the United States Bureau of Mines, stocks of all oils declined during April to the extent of 55,000 barrels, indicating that the demand exceeded production plus imports by that amount. Total stocks of all oils on April 30 amounted to 656,292,000 barrels, against 656,237,000 barrels on March 31. Stocks at the end of April, 1930, amounted to 698,689,000 barrels.

Domestic production of crude oil during April was 73,101,000 barrels, a daily average of 2,437,000 barrels. The total crude output for the month of April was about 3,800,000 barrels above the total reported for March, but about 4,000,000 less than was produced during April of last year. Imports of crude petroleum in April amounted to 4,162,000 barrels, against 3,715,000 barrels in March and 5,781,000 barrels in April, 1930. The total demand for all oil during April was 84,676,000 barrels, against 83,467,000 barrels in March and 92,859,000 barrels in April of last year. Exports of crude petroleum increased from 1,586,000 barrels in March to 1,826,000 barrels in April.

Oklahoma Proration Remains Six Per Cent of Potential

Oklahoma City.—Hearings on proration proposals for the Oklahoma City pool ended Friday when the Oklahoma Corporation Commission extended its order of April 20 to July 1 or until further action is taken. Under the order allowable production is set at six per cent of potential. During the last 10 days in April allowable production was about 165,000 barrels daily. Due to increasing potential as new wells are completed the allowable for June will be larger than for April or May.

Testimony introduced the first day indicated that demand for Oklahoma City oil for June would be about 152,000 barrels daily, for July slightly more than 149,000 barrels daily, for August 164,000 barrels daily, and for September 149,000 barrels daily. Nominations by companies were as follows:

Company.	June.	July.	August.	Sept.
Stanolind	18,500	18,500	30,000	30,000
Empire	33,000	33,000	30,000	30,000
Magnolia	1,000	1,000	1,000	1,000
Tidal	2,000	2,000	2,000	2,000
Oklahoma Pipe Line	10,000	10,000	10,000	10,000
Shell	12,000	12,000	12,000	12,000
Sinclair	50,000	50,000	50,000	50,000
Anderson-Prichard	1,100	1,100	1,100	1,100
I. T. I. O.	2,500[1]	.....	.....	.....
Capitol[2]	1,000	1,000	1,000	1,000
Century	500	500	500	500
Crude Oil Trans.	1,100	1,100	1,100	1,100
Peacock & Peveto	2,500	2,500	2,500	.....
Wilcox	10,000	10,000	10,000	.....
Continental	7,000	7,000	13,000	10,000

[1] For the first seven days in June only. No contracts for remainder of period.

[2] Capitol has production of its own. If it is able to get connections it will not purchase 1000 barrels indicated above.

The principal dispute came in considering Wirt Franklin's proposal to divide the pool into four zones or sources each to have a separate production allowance. J. B. Dudley and Warren G. Snyder, Oklahoma City attorneys representing 29 operating companies in the pool, opposed the plan and offered expert testimony tending to prove that oil is being produced from a common source and not from readily distinguished zones as contended in the Franklin application. Oscar Hatcher, consulting geologist, testified that certain wells were producing from as many as two sands and listed two additional sands not contained in the application. John Faust, geologist for Hall & Briscoe, expressed the belief that Arbuckle lime wells should be plugged and abandoned instead of granted a flow of 75 per cent of potential as urged. He admitted that the different sands were separated by shale or other impervious breaks but contended that wells had been drilled through one sand into others and that the various sands have been connected in this manner. The commission's order extending the allowable of six per cent of potential until July 1 was made with the provision that further action might be taken on the Franklin application during June.

White Eagle Plans Pipe Line Into McPherson County Area

Wichita, Kansas.—Local offices of Magnolia Petroleum Company have verified reports that White Eagle Oil Corporation is considering construction of a six- or eight-inch oil pipe line from its Augusta refinery to the Ritz-Decker-Garrett area in McPherson County, an air-line distance of approximately 55 miles. No definite decisions have been made concerning the commencement date, size of the line, or route to be followed.

Shell Pipe Line Company and Prairie Pipe Line Company own the only lines into the area and, with the exception of a small amount of oil which is being handled through Stanolind Crude Oil Purchasing Company's loading rack, Shell Petroleum Corporation is the only purchaser. Under the proration plans now in effect in the Ritz and Garrett pools, allowable production is based on a daily average demand of about 6300 barrels and apportioned by units among the various producing properties. Within the past few days allowable production has been reduced to seven per cent of potential and operators are faced with the problem of securing additional outlet or shutting in a majority of the wells. Construction of the new line at an early date would greatly relieve this situation although it would not add to the total demand from the state as White Eagle Oil Corporation's requirements are now being purchased in the fields of eastern Kansas. During December, 1930, its throughput averaged 6800 barrels daily, slightly over 50 per cent of capacity.

The proposed line is of further importance because of the possibility of its being extended into Rice and Ellsworth Counties where a considerable amount of production is shut in due to lack of outlet. Development in Kansas is swinging westward from the McPherson, Harvey, Sedgwick territory and the western half of the state is looked upon with much favor because of the new areas already proven and several favorable structures which have been defined through geophysical survey and core drill information. The area offers possibilities as a future source of supply for southern Kansas refiners, a problem to which little thought is being given during the present condition of over-production but which White Eagle Oil Corporation is probably considering in its plan to build into the new pools.

Oil and Gas Pipe Line Activities

▼ ▼ ▼

Four New Major Pipe Lines Proposed From East Texas

Tyler, Texas.—Four new major pipe line projects given approval during the past week by as many companies to accommodate flush production in East Texas will increase the direct pipe line outlet for the district to approximately 500,000 barrels daily. Tank car shipping facilities completed and building will permit the handling of more than 300,000 barrels daily on the four participating railroads, provided shippers can make disposition of the oil, while local refinery consumption of crude is to aggregate about 40,000 barrels daily. Including the new outlets, the possible transportation facilities for the district can be conservatively placed at 750,000 barrels daily within 90 days.

Having despaired of restricted production under the rules of the Texas Railroad Commission, which has been balked in its efforts by court injunction petitions filed by 15 producing and pipe line companies, Shell Pipe Line Company, Magnolia Petroleum Company and Humble Pipe Line Company authorized construction work during the past week that will protect their respective oil producing units with adequate pipe line facilities. These adverse developments in the proration situation enables Shamrock Pipe Line Company to obtain sufficient support from a group of independent producing companies, with large productive holdings, to proceed with its proposed 12-inch common carrier line to the Gulf Coast.

Trunk line facilities completed, building and authorized for the East Texas district are summarized below, with the column on the right including added capacity to lines already in operation:

Company—	Present Daily Capacity	Daily Capacity Building or Authorized
Arkansas Pipe Line Corporation ...	20,000	.....
Atlas Pipe Line Company	20,000	.....
Gulf Pipe Line Company	40,000	.....
Humble Pipe Line Company	40,000(*)	40,000
Magnolia Pipe Line Company	32,000	58,000
Shamrock Pipe Line Company	....	50,000
Shell Pipe Line Company	.....	40,000
Sinclair-Texas Pipe Line Company..	.....	50,000
Sun Pipe Line Company	.....	40,000
The Texas Pipe Line Company.....	50,000	.....
Total 202,000		278,000

(*) Exclusive of contracted shipments from Van field.

Shell Pipe Line Company

Shell Pipe Line Company is at work on preliminary details for immediate construction of about 200 miles of 10-inch welded line to extend from the heart of the Longview field via the Kilgore and Joiner fields to Shell Petroleum Corporation's refinery, tank farm and tanker terminals on Houston Ship Channel, near Houston. This line will serve Shell Petroleum Corporation, which is one of the leading lease owners in the East Texas district, with 29 operations now underway, besides completed wells, and will displace tank car shipments. Shell Petroleum Corporation has withdrawn its properties from the market after having had all or any portion of same on the block. One sale was made April 8 to Yount-Lee Oil Company for a consideration of about $1,225,000 that included the company's first producer.

Sufficient main line stations will be installed on Shell Pipe Line Company's trunk line to the Coast to permit the handling of 40,000 barrels daily. The company has a 10-inch carrier extending from New Mexico and West Texas areas to the refinery at Houston. Deliveries of East Texas crude via tank cars to the latter refining point have been made by Shell Petroleum Corporation during the past six weeks from racks at Camps and Kilgore, but movement has been restricted to actual proration allowances.

Magnolia Pipe Line Company

Magnolia Pipe Line Company is preparing to boost its daily outlet from East Texas from 32,000 to about 90,000 barrels through construction of about 100 miles of 12-inch line from the Kilgore field to Corsicana, and by the installation of a midway booster station on its existing 10-inch carrier. A portion of this new capacity will be allocated other operators on a common carrier basis, but the bulk of same will be needed by Magnolia Petroleum Company for the handling of controlled oil should proration be abandoned in East Texas. The latter has 27 completed wells, and has a similar number of operations listed on current drilling reports covering East Texas.

Deliveries of 12-inch pipe for Magnolia Pipe Line Company's extension line to Corsicana will enable welding crews to start work about June 10, and completion date is tentatively set for July 1. All work will be performed by contractors in order to expedite completion, as the company has disbanded its construction forces.

An additional pumping unit, consisting of a 450 horse power Busch-Sulzer oil engine and a 30,000-barrel capacity Prescott reciprocating pump will be installed at the Kilgore station now in service, and a midway station will be built on the Corsicana unit. Without this midway station the line will handle about 35,000 barrels daily, or 50,000 barrels daily with same.

Capacity of Magnolia Pipe Line Company's 10-inch carrier, extending from Norris station, Gregg County, to Center station, Shelby County, will be increased immediately from 32,000 to 40,000 barrels daily by the installation of motor driven centrifugal pumping equipment. In all probabilities Magnolia Pipe Line Company will also loop its trunk line south from Center station to Beaumont.

Pumping facilities of Magnolia Pipe Line Company from Corsicana station to Beaumont terminals now ranges from 120,000 to 130,000 barrels daily, according to grades of crude handled. When the new East Texas extension line is tied into this system the company will allow a portion of its crude runs from fields in North Texas, Oklahoma and Texas Panhandle to backup into steel storage tanks so as to sidestep congestion. Tidal Refining Company has a contract for use of 10,000 barrels of space

daily in Magnolia Pipe Line Company's East Texas line to the Coast, and is shipping the maximum volume daily.

Humble Pipe Line Company

Humble Pipe Line Company has authorized immediate construction of a second 10-inch trunk line to extend from the Gladewater section of the Longview field to the Louisiana border, where a hookup will be made with a new line to be built by Standard Pipe Line Company, Inc., also a unit of Standard Oil Company of New Jersey. Except for the extreme west portion, this new line will parallel an existing 10-inch carrier that is handling crude from the Van field and also that from the Longview and Kilgore fields in East Texas. This new unit will require about 50 miles of pipe, and will afford an outlet for about 30,000 barrels daily.

Upon receipt of oil at the Texas-Louisiana border, Standard Pipe Line Company transports same to Moore station, near Shreveport, where the stream is split, with southbound consignments going to the Baton Rouge refinery and tanker facilities of Standard Oil Company of Louisiana, and that going north feeds into the Middlewestern system of the Ajax Pipe Line Company.

Aside from the outlet which will be furnished by the line to Louisiana, Humble Pipe Line Company has authorized another project by which its capacity for handling East Texas crude will be further enlarged. Through increasing pumping facilities the company expects to be able to move approximately 30,000 barrels daily in its eight-inch carrier which extends from pump station in the Kilgore field via Arp station in the Joiner area to Todd station, Boggy Creek field, Anderson County, and from the latter point to Groesbeck station, Limestone County. This system heretofore has supplied a maximum outlet of about 20,000 barrels daily for the East Texas field. Humble Pipe Line Company has ample capacity in its trunk line system from Groesbeck south to the Gulf Coast.

Upon completion of this new pipe line work, Humble Pipe Line Company will have facilities for handling about 80,000 barrels of oil daily from the East Texas district, or almost as much as the company possessed during the boom days of the Corsicana-Powell field, where Humble Oil & Refining Company developed a peak daily output of 120,040 barrels during the 24-hour period ending 7 a. m. November 13, 1923. The company's potential production in East Texas is already several times greater than the above figure.

Shamrock Pipe Line Company

Shamrock Pipe Line Company, subsidiary of Shamrock Oil & Gas Company, which is in turn allied with Spang, Chalfant & Company, has about completed preliminary contracts that will result in the company starting work shortly on about 200 miles of 12-inch welded line to extend from the East Texas district to tanker terminals on the Houston Ship Channel, near Houston. This proposed line will function strictly as a common carrier for more than a half dozen independent companies with large lease holdings in the East Texas productive area, with the financing and operation to be carried out by the Shamrock Interests. Producing units in East Texas that have booked space in the line have arranged for the disposal of 50,000 barrels of oil daily upon delivery at the Coastal terminal.

Six main line pumping stations are scheduled to be installed on the Shamrock Pipe Line Company's proposed line, and gathering lines will be built into all sections of the East Texas district because of the holdings of the various shippers being scattered.

It is reported that tentative agreements have been reached for the line to terminate at the American Petroleum Company's tank farm and tanker terminals at Norsworthy station on the Houston Ship Channel. The latter is a subsidiary of The American Republics Corporation, which also owns Republic Production Company, a large producer and lease owner in East Texas. American Petroleum Company has 18 55,000-barrel steel tanks in service at its Norsworthy station, and also a 5,000-barrel daily capacity refinery.

General offices of the Shamrock Oil & Gas Company are now located at Amarillo, but an office is to be located at Dallas shortly. The company is largely owned by Pittsburgh, Pennsylvania, interests. W. C. Fownes, Jr., Pittsburgh, is chairman of the board of directors, and John J. Sherrin, Amarillo, is president.

United Gas Taking Over Operations of Subsidiary

Houston.—United Gas Public Service Company is liquidating its subsidiary, Dixie Gas & Fuel Company, and is taking over that company's franchises, contracts and physical properties.

There will be no change in the personnel or management. All of the former employes of Dixie Gas & Fuel Company will retain their relative positions with United Gas Public Service Company, which is the principal operating subsidiary of the United Gas Corporation.

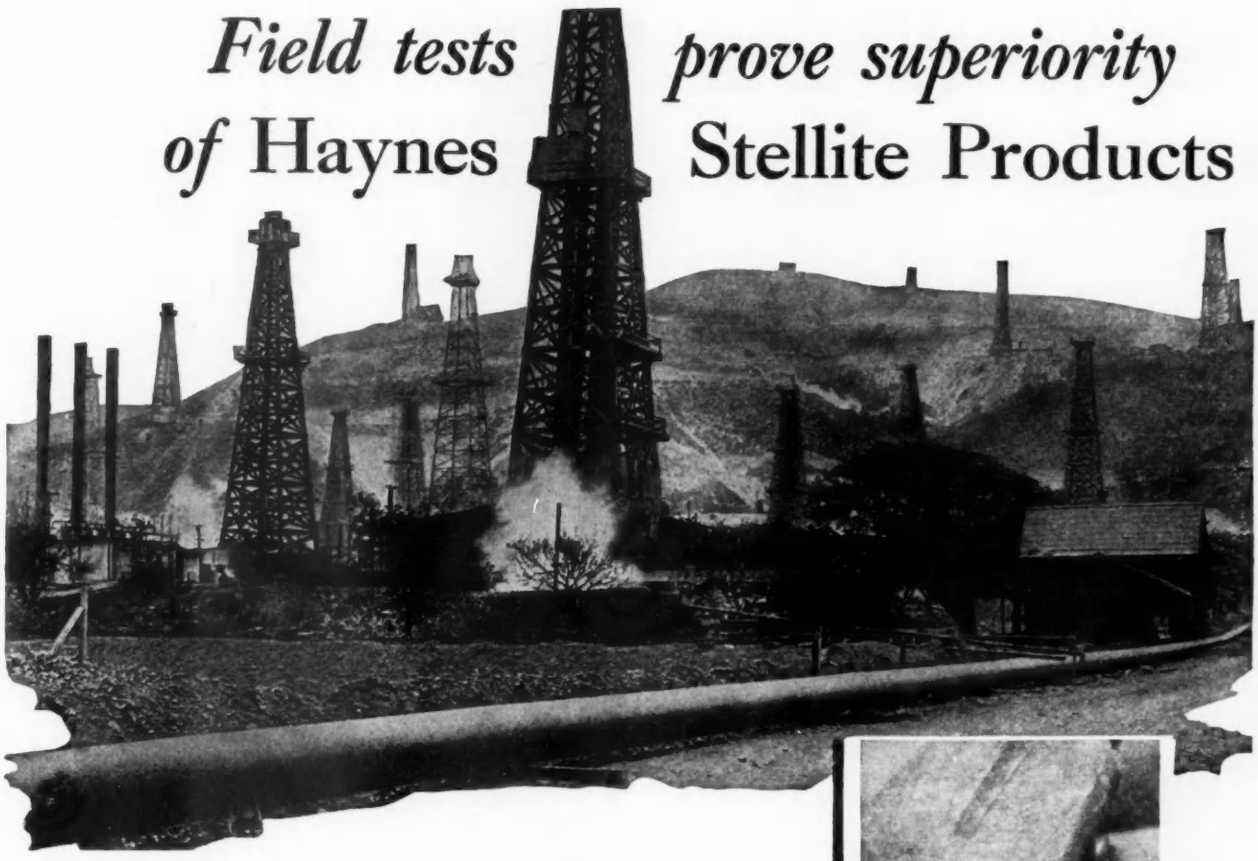
Dixie Gas & Fuel Company distributes natural gas in the following towns: Cleveland, Crosby, Dayton, Highlands, Humble, Liberty, Mt. Belvieu, Jonesville, Beaumont, Goodrich, Livingston, Lufkin, Orange, Sour Lake, Carthage, Garrison, Hallsville, Henderson, Jacksonville, Kilgore, Lindale, Longview, Marshall, Nacogdoches, Overton, Rusk, Scottsville, Swan, Timpson, Troup and Waskom.

United Gas Public Service Company, together with its subsidiaries, Dixie Gulf Gas Company, Houston Gulf Gas Company, Houston Gas and Fuel Company, Southern Gas Company, Southern Gas Utilities, Inc., Seagraves Gas Company, Southern Gas & Fuel Company, Northern Texas Utilities Company, South Texas Gas Company, South Texas Production Company, Texas Border Gas Company, Compania Mexicana de Gas, S. A., and United Production Corporation, comprise the United Gas System, operating in the states of Texas, Louisiana, Mississippi, Alabama and Florida and the Republic of Mexico.

Great Falls, Mont.—I. L. Koch, examiner for the Interstate Commerce Commission, has asked the commission for a higher freight rate in Montana on petroleum products. Some time ago the Montana railroad commission ordered the railroads to reduce their rates; the railroads took the matter to the United States district court, which ordered them to put the rates into effect; this was done. Now the I. S. C. is considering Koch's report, which recommends sweeping increases in freight charges on shipments of crude and refined products originating within the state. Refinery freight men say that adoption of Koch's schedule would throttle Montana refineries and producers, and benefit particularly those in Wyoming.

Jackson, Miss.—Pipe for the eight-inch line from the Jackson gas field to Hattiesburg, Mississippi, a distance of 90 miles, has been bought and surveyors and engineers are completing the proposed right-of-way which will in general parallel the Illinois Central Railway branch road between the two points. Orders for the pipe were placed last week. It is understood here that Frick-Reid Supply Corporation furnished the pipe. Work of laying the line is expected to begin soon after the middle of June. The line will be built by Public Service Corporation of Mississippi to furnish gas to the city of Hattiesburg.

Field tests prove superiority of Haynes Stellite Products



TEXAS oil-field records for the diamond substitute Haystellite, and for the wear-resisting alloy Haynes Stellite, are but typical.

At Spindle Top, bits hard set with Haystellite averaged 55% more footage per hour than the best hard set bits previously used . . . and established an average drilling record of 111 feet more per bit. In a 5,000 foot test well, hard set Haystellite bits gave an average of 50% more footage. From South Corsicana come reports of a company adopting Haystellite as the standard material for hard-setting core drills and fishtail bits, after conducting the most extensive tests.

Haystellite, while almost diamond hard, is tough enough to withstand the impact of drilling without chipping or crumbling. Drilling tools hard set with Haystellite and hard surfaced with Haynes Stellite give the greatest round-trip footage with the maximum drilling speed.

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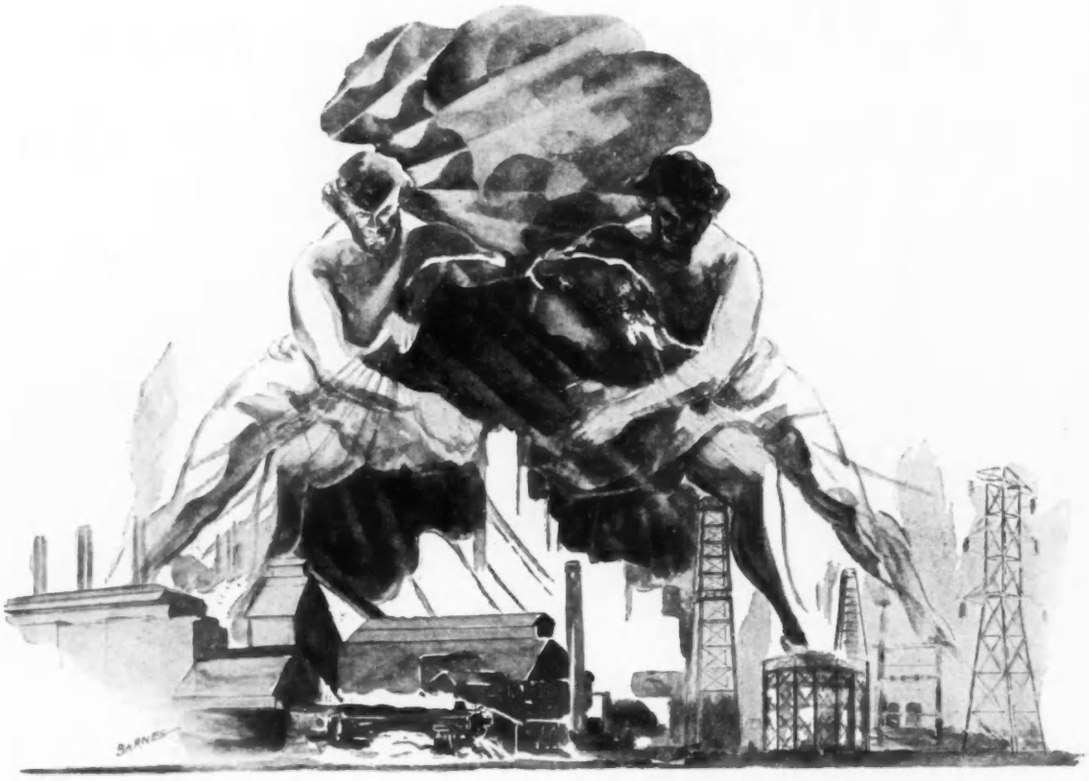

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EVERY oil company president, superintendent, foreman, worker of every kind....is in competition for advancement with every other in like position. Some go up faster than others. Why?

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Take one of the most important factors.... power. The use of electric power for drilling, for pumping, for refineries, reflects favorably on the earnings of the company and on officers who recommend it. It meets the great need of the present day....economy. There is no surplus power; the operator pays only for what he uses. There is no large outlay for power-generating equipment. Electric power responds as needed ....delicately or with mighty force.

GULF STATES
UTILITIES COMPANY

General Offices

BEAUMONT, TEXAS LAKE CHARLES, LA.

Personal Mention—Men You Know

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Sydney S. Smith, divisional superintendent of gasoline plants of the Shell Petroleum Corporation, was elected president of the Natural Gasoline Association at the national convention of that organization held at Tulsa May 25-27. He had served as a director of the association since 1929.

SIDNEY S. SMITH

The new president is a native of Pittsburgh, Pa. Since his graduation from college in 1915, except for two years spent in aviation corps during the war, he has been engaged in petroleum engineering work.

He joined the Shell organization in 1924 as office manager of the gasoline department. He was placed in charge of the department in 1925. During his association with Shell he designed the cross-flow stabilizer and perfected methods of stabilizer control. He was one of the first advocates of the unit type of plant construction, now generally used in the industry.

John D. Clark, at one time president of the Midwest Refining Company, has returned to his home in Cheyenne, Wyoming, after having completed his post graduate work in economics at John Hopkins University. Mr. Clark will take the chair of economics at Denver University in the autumn, although he will continue to make his home in Cheyenne.

W. A. Pitts who has been with the Regan Forge & Engineering Company for the past several years in the Mid-Continent territory, is now associated with the American Iron & Machine Works Company as sales representative.

W. L. Childs, general manager of Reed Roller Bit Company of Houston, is visiting the California territory.

Frank V. Faulkner, vice-president and manager of production for Magnolia Petroleum Company, returned to Dallas late last week after having spent the past four months in Europe, accompanied by his sister, Miss Anna Faulkner.

R. D. Wallace, land and lease man for Prairie Oil and Gas Company of Wyoming, has returned to Casper, following an extended business trip through California.

John Leonard, New York financier who drilled a wildcat well near Piru, California, has shipped equipment to Cuba for a test on that island. The work will be in charge of William Leonard, who was also active in California.

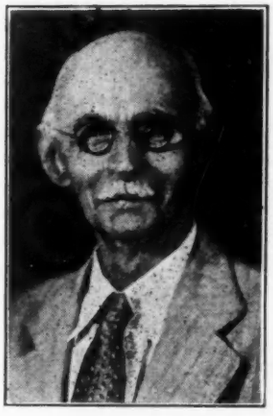
Charles P. Price, attorney and general manager for Trinidad Oil Fields Operating Company, Ltd., and West India Oil Company, Ltd., Caribbean producing and marketing subsidiaries of Standard Oil Company of New Jersey, died recently following sun-stroke. Price was one of the most popular members of the oil colony of Trinidad, British West Indies.

T. H. (Hank) Lankford, for 14 years associated with the T. T. Word Supply Company, Houston, the last three years as sales manager, has become associated with the Geo. J. Fix Company, Dallas, Texas.

T. H. (HANK) LANKFORD

Mr. Lankford will supervise sales and distribution of Baldwin Oil Field Chain in Texas, Oklahoma, Arkansas, Louisiana and New Mexico. Mr. Lankford assumed his new duties June 1, and is now making a circuit of his territory and calling on the jobbers.

David K. Buchanan, affectionately known as "Mr. Buck," chief clerk for Gulf Refining Company of Louisiana, at Shreveport, was given a "surprise" dinner by officials of the company and fellow employes Friday night, May 29, upon his retirement from service at the age of 75 years, after 20 years service with the



DAVID K. BUCHANAN

company. He was presented with a gold watch and chain by his fellow employes, the presentation being made by C. R. Minor, vice president of Gulf Refining Company. Mrs. Buchanan was presented with a check. Mr. and Mrs. Buchanan will make their home in Wichita Falls, Texas. They are natives of Pennsylvania. They have been married 56 years. Mr. Buchanan entered the service of the Gulf Refining Company of Louisiana as a field man in the old Pine Island field, Caddo Parish, on May 10, 1911. He later saw field service for the company in the Naborton and Bull Bayou fields and has been chief clerk of the Shreveport office since 1916.

Walter L. Meyers has been appointed general petroleum representative by the Missouri Kansas & Texas Railroad with headquarters at Tulsa to bring about closer contact with the petroleum industry in the Southwest in view of the fact that the industry constitutes a very large percentage of the total volume of traffic handled.

D. D. Kiniry, field superindendent for Sun Oil Company in West Texas and New Mexico with headquarters at Breckenridge, has been transferred to East Texas to take charge of drilling and production activities of the company in the Kilgore field. G. E. Sweeney, Longview, is in charge of the Longview area, and B. M. Givens is superintendent of the Joiner field section of the district.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

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Seven Oklahoma City Wells —235,000 Barrels Initial

Oklahoma City.—On June 1, 780 producing wells had been completed in the Oklahoma City pool, bringing to a close a banner week so far as completions within the last two or three months. Of this number 729 were shut in during the 24-hour period ending at 7 a. m. while 41 sand wells produced 48,028 barrels and 10 Arbuckle lime wells 1603 barrels. This is a new production low for 1931, made necessary because of overproduction of practically all properties during April and May. During the week production declined from 143,360 barrels, which was a drop of over 30,000 barrels under the preceding seven-day period, to 132,960 barrels for the week ending at 7 a. m., Saturday, May 29.

Seven wells were completed for a total 24-hour potential of approximately 235,000 barrels. Westgate Oil Company's Carey 2, NE SE NW SE Section 34-12n-3w, was the largest with an initial flow of 6226 barrels in 3¼ hours, or at the rate of 46,894 barrels when calculated on a 24-hour basis. Wilcox sand was encountered at 6338 feet and penetrated to a total depth of 6542 feet. This well, which is the northernmost producer, is located 1056 feet north of the Slick Estate's Wespaco 1, which came in several months ago. T. B. Slick Estate's Terminal 1, CE½ NW SE NW Section 3-11n-3w, logged Wilcox from 6335 to 6520 feet and gauged 1501 barrels the first hour. Total depth is 6546 feet. Payne and Johnson 1, Block 5, NW SE NW NW Section 10-11n-3w, had 156 feet of Wilcox sand and stopped drilling two feet below the base of the sand at 6542 feet. Initial gauge was 1344 barrels the first hour after which time it was shut in by orders of the city commission. Hudspeth et al's Rinehart and Donovan 1, CS½ SW NE NW Section 3-11n-3w, topped Wilcox sand at 6329 feet and stopped at 6490 feet still in the sand. After flowing 793 barrels in 30 minutes the upper master gate was badly damaged and it had to be shut in. Gas gauged 42,000,000 cubic feet.

Phillips Continues Gusher Lead

Phillips Petroleum Company maintained its lead in completion of gusher wells when two of its tests in Section 10-11n-3w came in flowing at the rate of better than 30,000 barrels each. Henderson 1, SW NW NW NE, had Wilcox sand from 6308 to 6476 feet and flowed 6504 barrels through a 5¼-inch choke during the first four hours. Perry 1, NW NW NE SW, encountered Wilcox at 6395 feet and produced 5292 barrels in four hours from a total depth of 6524 feet still in the sand. The company came in for further honors when McBeth 1, NW SW NE Section 10-11n-3w, was opened for a new potential gauge. The gauge for 2¼ hours was 9400 barrels, making its 24-hour potential slightly in excess of 100,000 barrels and establishing the record of being the largest well in the Mid-Continent area. Oils Incorporated's Ross 1, which was completed several months ago at an estimated potential of 114,000 barrels daily still lays claim to being the largest sweet oil well ever completed but the estimate was made on an 18-minute flow so some dispute arises as to whether it would have exceeded the McBeth if allowed to flow for a longer period. Its potential rating is now only 55,329 barrels daily.

The most important drilling well at this time is Capitol Producers and Refiners' Refinery Site 1, NE NE SE Section 4-11n-3w, several locations west of production in the northern portion of the pool. It is waiting on cement to set on the last string of casing set at 6540 feet. This test is located near what has been estimated as the western limit of Wilcox production and its completion will be of interest for that reason.

In the older portion of the pool Indian Territory Illuminating Oil Company completed Pasadena Heights 6, SWc Section 14-11n-3w, an inside location whose offsets were completed in 1930. Top of the lower Simpson was encountered at 6388 feet and drilling was carried to 6607 feet. The well was "washed in" and bailed for an initial flow of 37 barrels in five minutes. Fifty-eight barrels were picked up from the slush pits.

Offset Drilling Makes Carr City Most Active in Seminole

Seminole, Oklahoma.—Magnolia Petroleum Company abandoned Powell 1, NWc SW SE Section 15-6n-7e, two miles west of Sasakwa, last week when it lost a core barrel and 4400 feet of drill pipe in the hole. Dry Simpson sand had been cored at 4573 to 4584 feet and the last core at 4625 to 4634 feet had been taken when the barrel was lost. This is the second test within the past few weeks to lose tools in the hole when entering the top of the Wilcox sand.

A majority of the Seminole activity is located in the north edge of the Carr City pool where several tests have been forced due to offset requirements. Empire Oil & Refining Company's Brown 3, NWc NE SE Section 3-8n-5e, swabbed and flowed 115 barrels of oil in 10 hours from Hunton lime topped at 3955 feet. Prairie Oil & Gas Company's Haasman 2, an offset to Brown 3, had Hunton lime from 3954 to 3973 feet from which formation it flowed 50 barrels in 1½ hours. Both tests probably will be deepened. The same company's Sager 1, SE SW Section 8-9n-6e, mid-way between the Seminole City and Earlsboro pools, topped the Brown lime at 3500 feet, Cromwell sand at 3575 feet, and had a good showing of oil at 3645 feet. At last report it was drilling at 3800 feet. Prairie Oil & Gas Company and T. B. Slick Estate's Hyde 6, NW SE NW Section 2-8n-5e, logged Wilcox sand from 4155 to 4165 feet. At the latter depth the well swabbed 375 barrels in 12 hours, 155 barrels of which is estimated to have come from Wilcox sand.

Droppleman Drilling Company and Amerada Petroleum Corporation are shut down awaiting orders on Jones 1, SW NW Section 21-8n-3e, one mile northeast of Macomb in Pottawatomie County. Mayes lime was encountered at 4490 feet, Woodford shale at 4595 feet, and Hunton lime at 4645 feet. Operators cored a show of oil and gas at 4675 to 4715 feet in the Hunton and dry sand at 4760 to 4775 feet. Another showing of oil with water was encountered at 4847 feet. Present total depth is 4878 feet.

Southeast of Davenport

Mid-Continent Petroleum Company penetrated Wilcox sand from 4250 to 4318 feet and had a considerable amount of water showing in Lillis 1, NE NE SE Section 9-13n-6e, about eight miles southeast of the Davenport pool in Lincoln County. This

test has been looked upon with favor since it was reported to be running about 50 feet structurally higher than wells in the same township. After coring Hunton lime at 4038 to 4055 feet with nothing showing, operators drilled into a small show of oil in the base of the Viola lime at 4190 feet. It will be plugged back to test this show.

Blackwell Oil & Gas Company extended production over a mile southeastward from the old Wewoka pool when Holmes 1, SW NE SW Section 9-7n-8e, flowed 80 barrels of oil in 12 hours along with gas estimated at 25 to 30 million cubic feet. Total depth is 3970 feet, probably in the Booch sand.

Lynch et al's Newby 1, SE NE NE Section 24-5n-4e, on the northwest end of the Beebee pool, topped the Viola lime at 2313 feet and had a gradual increase in water from 2360 feet to 2409 feet. When last reported it was being drilled at the latter depth with about 1600 feet of fluid in the hole, and some gas was coming through the column. Woodford shale was encountered at 1999 feet and a small show of gas in Hunton lime at 2074 to 2079 feet. Lynch and Newby have announced location for a west offset to the Newby 1.

Konawa Pool

Gypsy Oil Company encountered the second sand at 2640 to 2661 feet in Charty 1, Section 29-6n-6e, old producer in the southern portion of the Konawa pool. Old total depth was 2628 feet at which point the well had ceased to be a commercial producer at the present crude prices. Production for the first 24 hours from the second sand was 480 barrels.

Wichita, Kansas.—The Decker pool in McPherson County gained the distinction of having the largest gas well ever completed in Kansas when McPherson Oil & Gas Development Company and Shell Petroleum Corporation's Meyers 1, CSE Section 14-19s-2w, came in flowing at the rate of 55,000,000 cubic feet. It is located practically on top of the structure and in the center of the field.

Further Activity Decline Due in Southern Oklahoma

Ardmore, Oklahoma.—One new location and a new start in the Tatums pool broke the monotony of routine reports from Southern Oklahoma during the past week. Drilling activities, which have been considered at minimum for several months, probably are due for further decline since much of the southern Oklahoma oil will be seriously affected by recent cuts in the crude oil market. Among the older pools where gravities range downward from 36 degrees, lifting costs on many leases are in excess of the present posted price for oil and the present market situation may see abandonment of a large number of heretofore profitable properties. Most certainly this will not be conducive to further drilling except in extreme cases.

Cement Pool

Mid-Kansas Oil & Gas Company and Ramsey Petroleum Corporation's Preston-Culp 6, NW NE NE Section 6-5n-9w, deep test in the western portion of the old Cement pool, continues to hold the center of interest as it is gradually approaching the Mid-Continent depth record. Dry sand was logged at 7490 to 7506 feet and the last report shows the test drilling at 7544 feet in sandy shale, 1039 feet less than Sinclair Oil & Gas Company's Nowell 1, SW Section 14-26n-24w, which was drilled to 8583 feet in 1930. So far as can be determined at this time, the test is still drilling in Pennsylvanian formations. Magnolia Petroleum Company is drilling below 4815 feet in Estes 2, SE SW NE Section 10-5n-9e, in the eastern portion of the pool. Water was encountered in sand topped at 4779 feet with no appreciable increase at the present total depth. Both tests should prove valuable from the viewpoint of geological information. They are located approximately three miles apart, a distance which should facilitate interpretation of the structural condition existing below the Pennsylvanian if and when formations below that series are penetrated.

Tatums Pool

Magnolia Petroleum Company is rigging up rotary tools at Wirt Franklin 1, SW NW NE Section 15-1s-3w, three-fourths of a mile northwest of production in the Tatums pool in Carter County. K. D. Oil Company and Frank Gouin are drilling below 1600 feet in J. W. Burton 1, CSW NW Section 30-1s-2w, on acreage formerly held by Simpson-Fell Oil Company. This test is located on a northwest-southeast line intersecting the southeast edge of the pool and the Gouin and others small producer in SE SW NE Section 31-1s-2w. Trevelyn Oil Company has completed rigging up and is laying water and fuel lines to D. W. Ratliff 1, NE NW SW Section 19-1s-2w, on the eastern edge of production.

Duncan District

Crane and Rankin's Adkins 1, NE NE SE Section 14-1s-9w, Stevens County wildcat north of the Oil City pool, is shut down at 3265 feet in red lime.

Northeast of Marietta

Batson, Starritt and Autry reports a small showing of oil in sand at 692 to 700 feet in Dr. Autry 2, SE NE Section 27-6s-2e, wildcat test located about seven miles northeast of Marietta in Love County. Production is being sought in sands of Trinity age calculated to lie at depths not exceeding 800 feet. Trinity outcrops occur along the south and east banks of Red River approximately 10 miles southeast of the test.

Indiana Subsidiaries Move To New Quarters in Tulsa

Tulsa.—Standard Oil Company (Indiana) became permanently located in Tulsa on Saturday, May 29, when the Stanolind Crude Oil Purchasing Company and Stanolind Pipe Line Company moved from the Sinclair building, where they have had temporary quarters, to new offices in the Philcade building at Fifth and Boston. The companies are to occupy the four upper floors which were recently completed for that purpose. Stanolind Oil & Gas Company has occupied space on one of the lower floors but will move to the tenth floor as soon as the turmoil of moving the other companies has been completed. The Philcade is now a 14-story structure, located in the business heart of Tulsa.

Pennsylvania Continues 50-30 Production Ratio

Pittsburgh, Pa.—The Pennsylvania Oil Conservation Board, at its regular monthly meeting here, voted to continue the 50-30 production ratio in the Pennsylvania grade producing area. This area comprises the Allegany field in southwestern New York, Southeastern Ohio, West Virginia and Pennsylvania. Production under the existing proration plan is curtailed 50 per cent in the Allegany and Bradford fields where pressure methods are used to bring oil to the surface, and 30 per cent proration in all other fields and districts. According to W. R. Shaw, acting secretary of the board, the action was taken to maintain as nearly as possible a balance between current supply and demand. Mr. Shaw stated that at present about 2000 barrels of Pennsylvania oil is being placed in storage daily.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

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Running Liner for Test In World's Deepest Well

Ventura, Calif.—Chanslor-Canfield Midway Oil Company is running a string of 2½-inch tubing for a production test in Hobson A-2, world's deepest well which was drilled to 10,030 feet. A string of 5¾-inch casing was cemented at 7479 feet several months ago and prior to a production test at that depth. Since the present depth was reached, a combination 4¾- and three-inch liner was run from the shoe of the 5¾-inch string to bottom. This latest addition was perforated to give a possible producing range of more than 2500 feet. None of the cores taken below the last major shutoff showed definite signs of water, while streaks of oil sand were cut at various levels. A fair gas pressure was developed between 9000 and 10,000 feet, but the company fears that it is insufficient to raise a column of fluid such a great distance. The formation was hard brown shale when the drill stopped. Opinions differ as to whether Hobson A-2 is located on the same structure as the Rincon field or on a separate structure, but it is generally conceded that the latter is the case. There is a possibility that the field may extend toward the ocean and to a much more accessible region than the hilly section which holds the record wildcat. Continental Oil Company is drilling an offset on the same section (23-3-24) and the second test is checking higher on structure than Hobson A-2.

Bakersfield, Calif.—Associated Oil Company has drilled to 5510 feet in Reward 1, a deep test in the North Belridge field, and is running a liner to complete. A string of 11¾-inch caasing was cemented over the Temblor formation at 4998 feet. The formation below the shutoff was chiefly oil sand and the well is sure to make a producer. It is located almost as high on structure as the discovery well in the deep zone. Belridge Oil Company found the top of the Temblor formation at 4917 feet in No. 35-8 and successfully landed a string of 10¾-inch casing at 4915 feet for the final shutoff. Continental Oil Company should soon know the position of the Temblor formation in Result 2, the first deep test drilled by the company. This well is approaching the 5000-foot level and the Temblor should be found above 5200 feet.

Playa del Rey Example Of Improper Development

Los Angeles.—Although the Playa del Rey field will not prove a profitable venture to the average townlot operator, it could have been developed to advantage on a more conservative basis. The wells all came in with low initial yields, but the decline was slow and correct spacing would have resulted in profitable development for all concerned. Primarily a low pressure field, Playa del Rey was not given a chance to produce at a profit. The rush to develop small lots started four times as many wells as should have been drilled. Even with the completion of the majority of the wells started, the decline has been slow. The first 25 wells completed in the townlot district reduced the gas pressure enough to force a low initial yield. The larger leases are being developed on a conservative basis and will pay out satisfactorily. Union Oil Company may extend the field to the southeast, through completion of Vidor 1, which was drilled to 5911 feet. The well was swabbed and produced some oil, but not in commercial quantities. There are now only 20 active drilling wells, most of which will be completed in the deep zone. This is a reversal from the trend toward the shallow zone a year ago.

Kettleman Hills Activity Stable With 24 Operations

Coalinga, Calif.—Standard Oil Company of California has completed No. 21-33J on the North Dome at Kettleman Hills with an initial flow of 14,000 barrels of 36 gravity oil from 7952 feet. This well is located about 4800 feet southeast of Superior Oil Company's Huffman 1 and almost directly up structure from the latter. Following the cementing of 9⅝-inch casing over the Temblor formation at 6600 feet, a string of 6⅝-inch casing was landed two feet off bottom and cemented through perforations around 7000 feet. This procedure shut off the upper gas zone and accounted for the low gravity oil produced from the bottom of the Temblor zone. Although well located on the structure, the new producer is more than three miles northwest of the apex of the North Dome. The consistent record of completions on the northwest plunge of the structure indicates an unbroken chain of producers for several miles.

Superior Oil Company has reduced the flow of Huffman 1 to a fraction of its potential production. This well produced at a 21,000-barrel rate when opened for a short flow test. Seven traps were required to handle the well during the short test. Completed at 8320 feet and flowing from more than 1000 feet of formation, this edge well points to a very large production on the northwest plunge of the structure. An unusual feature of the flow test was a cut of only two-tenths of one per cent while the well was wide open. The absence of free water during such a drain establishes the Temblor formation as a remarkable oil-bearing zone.

Kettleman North Dome Association will soon complete three wells, all of which should be large producers. Continental Oil Company's No. 2P-41 was drilled to 7879 feet and will be completed with a 6⅝-inch casing cemented through perforations at 7220 feet. This will shut off all of the upper portion of the Temblor formation and insure a low gas-oil ratio. A string of 9⅝-inch casing was cemented over the formation at 6297 feet. The Association is completing Pacific Western Oil Company's No. 34J-27, which was drilled to 8043 feet. A string of 8⅝-inch casing was cemented over the Temblor zone at 6420 feet but the 6⅝-inch perforated liner was cemented through perforations at 7495 feet to insure shutting off of the troublesome gas zone. The Association's Pacific-Western 1P-2 is also being completed, being potentially the deepest producer in the field. This well was drilled to 8367 feet but only a portion of the formation below the nine-inch shutoff at 6730 feet was included. This well cut a record thickness of Temblor zone.

Petroleum Securities Company's Felix 1, recompleted a few weeks ago with a very low gas-oil ratio, is now producing more than 40,000,000 cubic feet of gas with 8500 barrels of 35.3 grav-

ity oil. The company's Felix 2 has a much better gas-oil ratio, flowing 3300 barrels of oil and only 3,000,000 cubic feet of gas.

All of the first completions are producing with extremely high gas-oil ratios. Milham Exploration Company's Elliott 1, the discovery well, has declined to 1200 barrels, but gas production is in excess of 54,000,000 cubic feet. Standard Oil Company of California has three wells which are also particularly bad offenders in this respect. The three wells are producing a total of 5200 barrels of 61 gravity oil and 209,000,000 cubic feet of gas. All are flowing from the top of the Temblor formation and may be killed for deepening if pressures decline sufficiently.

Union Oil Company will complete its first well within the next few weeks. This test on Section 29-21-17 has checked slightly higher on structure than Superior Oil Company's Huffman 1, an offset.

The Kettleman North Dome Association is carrying out an elaborate field plan, having started extensive pipe line and storage projects. The two producing wells which are now flowing with high gas-oil ratios will be killed and deepened to the lower Temblor formation as soon as enough additional production is developed to maintain a steady revenue. The killing of the wells does not embody the risk commonly believed. Both production and pressures are down far below the levels recorded at the time of completion. Consolidation of personnel makes the Association's activities equivalent to those of a single operator. About 40 per cent of the North Dome area is controlled by the organization.

Kettleman-Hills has 24 active wells, of which two are on the Middle Dome. Necessity for offsetts will maintain about the present average for several months. The fee land remains outside the unit plan of operation and it has been edge completions on these tracts that have caused the increase in field work. Landowners have insisted that their holding be developed, with the operating companies holding to the plan that they may be forced to drill in accordance with lease provisions. The small amount of fee land has been directly responsible for over one-half of the present production.

Taft, Calif.—Birch-Royer Oil Company is making a persistent effort to obtain production in Maricopa 2, the deepest test ever drilled in the Maricopa Flat district, having shot the well at two levels to increase the incoming fluid. Following an unsuccessful swabbing test at 9000 feet, two shots of nitroglycerine were set off. Subsequent swabbing brought only water and a small amount of gas and the well probably will not make a producer, even after the unusual procedure. The small amount of fluid entering the hole indicated that a water shutoff had been obtained and that a breaking up of the formation near the bottom of the hole might result in commercial production. The Maricopa Flat district was very active during 1930, but over-production in other fields reduced the number of drilling wells to one.

Los Angeles.—Several new districts in the Los Angeles basin have sprung into prominence during the past few weeks, due to belief that filing intention to drill before the new state laws become effective will allow the operators to proceed at some future time. One of the laws prohibits drilling within a certain distance of the property line, while another limits activity on tideland permits. The Sharkey bill will virtually end townlot drilling activity, and operators and prospective operators in the Sunset Beach and Wilmington districts have rushed to obtain permits to drill, with the view of starting operations later. The stampede to drill in the Sunset Beach district was not founded on favorable developments and individuals were chiefly the permittees. A small well was completed east of the Torrance field and activity near Wilmington was based on the belief that an extension had been found.

Santa Barbara Wildcats Show Nothing Favorable

Santa Barbara, Calif.—Two or three of the most interesting Santa Barbara County wildcats still have a chance at production, but developments during the week were not especially encouraging. General Petroleum Corporation swabbed More 3, a deep test near Goleta, but only gas and water responded to the production test. The Goleta field has an interesting history, accounting for at least one spectacular blowout at some point above 4000 feet. The first well was being cleaned out and blew in at an undetermined level between 2700 and 4400 feet. This well failed to make a producer and two more wells have been drilled. The Orella field, which is considered a semi- wildcat below the 1300-foot producing level, was the scene of two mild blowouts and fires during the week. General Petroleum Corporation's Erubro 10 caught fire at 2669 feet but little damage resulted. Oakburn Oil Company's Sperry 169-1, a tideland permit test also caught fire and the rig was destroyed. A new rig will be built and testing continued. This well was drilled to 2821 feet in search of a producing zone below the shallow formation.

Getty Plans Conclusive Test in Lost Hills Well

Bakersfield, Calif.—George F. Getty, Inc., intends to make Lincoln 1A as conclusive a test in the Lost Hills field as possible, the latest plan calling for the running of a string of 6⅝-inch casing as near bottom at 4077 feet as possible. The well was tested above 4000 feet but failed to produce oil in commercial quantities. Streaks of sand cut below 3800 feet were doubtful, but a thick body of shale was found between 4050 feet and bottom. The decision to run an additional string of casing will lead to additional drilling after a water shutoff is obtained. The shale body is merely taken as a favorable indication, this type of formation being necessary for successful cementing of casing and also being the favorite stratum above producing zones. The chief difficulty in deep tests at Lost Hills has been in cementing, and a suitable shale body exactly meets requirements. General Petroleum Corporation has worked its way through the high pressure water formations and is now drilling at 3200 feet in No. 3144, the first deep test. Universal Consolidated Oil Company is drilling at 5440 feet in No. 49, which has been tested unsuccessfully at various levels.

Walsenburg, Colo.—Test on Badito-Alamo structure, in Southern Colorado, which is being drilled by Alamo Oil Company is standing at 4115 feet, waiting for rotary to be brought from the Hobbs district in Southeastern New Mexico. This test was originally a joint operation of the Kinney-Coastal Oil Company and the Parker Club, Inc. It was spudded in in 1928 and drilled to its present depth, where there is a showing of oil and gas in the top of the Lokota formation. Parted pipe, tools in the hole, and inability to get the cement to set have all delayed completion. Company plans now to rotary drill to the Pennsylvanian.

Fort Sumner, N. M.—The test on Buffalo Creek structure, East Central New Mexico, which was originally started by the Navajo Oil Company and then turned over to the Pittsburg Oil Company, is to be drilled deeper by the latter company. Well has been standing at 4508 feet since June, 1929. Casing is to be run and drilling resumed.

New Mexico and Rocky Mountain Area

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Greasewood Dome Has Three Drilling Tests in Prospect

Denver, Colo.—Three drilling wells on the Greasewood dome structure, in Weld County, Northeastern Colorado, will soon be a reality, although at present Reiter-Foster Oil Company's joint test with Platte Valley Petroleum Corporation is the only active operation. The newly-organized Aztec Corporation is prepared to move in immediately for two tests to be drilled by Capitol Drilling Company, of which Wirt and Harry Franklin of Ardmore, Oklahoma, are at the head. One well is to be two miles north of the discovery brought in last fall by Platte Valley Company, and the other will be on a location to the northwest. Both will be rotary tests. The Reiter-Foster Oil Company's operation is making good progress below 4000 feet, and is said to be about 35 feet higher on structure than the discovery well. Rotary drilling is to continue to 6400 feet and then cable tools will be used to drill into the expected production. The discovery well, which is not believed to be drilled far enough into the producing sand to permit flush production, is still producing about 350 barrels of high gravity crude per day.

Santa Fe, N. M.—A California group is reported to be ready to drill a 6000-foot wildcat well on the El Vardo structure in Rio Arriba County, on the Tierra Amarilla Grant, in Northern New Mexico. It was on this structure that Standard Oil Company of Colorado (independent) reported it had blocked up 21,500 acres. There are two domes on the structure, one with a closure of 500 feet and the other with a closure of 600 feet.

Great Falls, Mont.—Leases on federal owned land in the Kevin-Sunburst field in Montana, on Sections 19, 29, 30, 10, 11, and 15-35-2w and 3w, will be sold at the United States Land Office here June 29. More than 194 acres are included in No. 1 unit; 320 acres in No. 2 unit; 560 acres in No. 3 unit, and 360 acres in No. 4 unit.

Las Vegas, N. M.—The Wagonmound structure, north of this city, which has been proved for production of carbon dioxide gas, has recently been taken over by William M. Fulton and associates of Conrad, Montana, who will develop the property for the manufacture of "dry ice." The Arkansas Natural Gas Company drilled the first well on the structure in 1925, but when only carbon dioxide gas was discovered at 1600 feet, for which there was than no market, the test was abandoned. The Fulton people will drill a test on Wagonmound this summer, the gas to be piped to Las Vegas to a plant for the manufacture of dry ice.

McIntosh, N. M.—Estancia Valley Carbon Dioxide Development Company is a new incorporation which plans to develop a supply of carbon dioxide gas near this town, in Torrance County, New Mexico. Gas is found at 1200 and 1300 feet and is said to be 98.34 per cent pure carbon dioxide. Open flow is, however, small, averaging only 100,000 to 250,000 cubic feet per day. Associated with the developing company is the Witt Ice & Gas Company, which plans to build an ice plant for the manufacture of "dry ice" and other products.

Osage, Wyo.—A 3000-foot extension to the southwest has been made in the Osage field in Eastern Wyoming by the completion of Hugh Updike's well on Section 23. The well is good for 100 barrels natural in sand at 1820-33 feet, and will not be shot until market improves. The discovery is in territory formerly condemned by major operators.

Douglas, Wyo.—Activity in the old Brenning Basin shallow oil field, west of here, has been resumed by the 4-C Oil Company which took over the O'Bannon & Barker leases. Four wells have been opened up and put on production, and two more are being conditioned. Altogether the six wells should average about 15 barrels per day of high grade crude. The company will manufacture gasoline at its small skimming plant on the lease and will market the same on the Yellowstone highway, which is near the field.

Parco, Wyo.—Producers & Refiners Corporation's deep test through the "big gas" sands in the Sand Draw field, Fremont County, Wyoming, has drilled through the Sundance formation without finding anything of value, and the well is now to be plugged back to its gas production, where it will be completed. This well was drilled to 5345 feet, and was originally planned to test all possible lower sands for oil. The field has long been a consistent gas producer.

Rock Springs, Wyo.—Baxter Basin gas field's recent oil discovery seems to have been proved worthless, after the Mountain Fuel Supply Company has cleaned out Cappers 1 and bailed it dry, only to have the hole fill up 500 feet with water. Total depth is 3660 feet.

Santa Fe, N. M.—The new leasing act is to become effective in New Mexico on June 12. The new law will do away with the preference right to renewal of an expiring lease by competitive bidding, and will substitute a blanket renewal right. Under the old law the holder of a lease could obtain a renewal only by accepting the rentals established by competitive bidding. The new law gives him the privilege of converting his present lease for the unexpired period into a new lease at the expiration of which he has the right to a five-year extension at double the present rentals.

Dayton, N. M.—It is reported that State Oil & Refining Company will sell its plant here to the Maljamar Oil & Gas Company. It was this plant which was shut down several weeks ago when the New Mexico state highway department gave a contract for $80,000 worth of road oil to Petrol Corporation of California. The Dayton plant had been running on black oil from the Getty pool in Eddy County; after taking off gasoline, the crude was sold for road-building.

Denver, Colo.—The wildcat well which is perhaps attracting the most attention in Colorado at present is the deep test to the Tensleep spudded in by The California Company May 19. The company has established a fine camp with excellent buildings and the machinery and equipment is rated to be among the very best ever brought into the state. A 138-foot combination steel derrick is in use, and there are two Diesel engines.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Production Extended West In Kilgore South End Area

Tyler, Texas.—Westward extension to the south end of the Kilgore field was accomplished over the past week-end when Southern Crude Oil Purchasing Company's Smith 1, located in southeast corner of lease, Wm. Killen Survey, and on west side of railroad, made heavy flow on drill stem test from five feet of soft oil and gas sand at a total depth of 3763 feet. This outpost well was drilled 3344 feet below sea level, but did not show water on the brief test. A string of casing is to be cemented on top of the cap rock at 3757 feet before placing the well on production. This company has a large block of leases lying to the west, having acquired same in 1927 at $1.50 per acre on the strength of surface geology. Arrangements have been made for pipe line connection with the gathering system of Stanolind Oil & Gas Company, an affiliated concern.

Having failed to develop a flowing producer after deepening to 3646 feet, Magnolia Petroleum Company's Dick Wells 2, located on the east side of the original section of the Kilgore field, is rigging up standard tools to pump. This will be the first pumper in the field. E. B. Madden et al's Mose Mayfield 1, an east offset, also failed to flow after drilling to 3734 feet, or 3260 feet below sea level, and will be put on beam. Sinclair Oil & Gas Company's Major Kennedy 1, located to the north of the above small wells, suffered a similar fate after drilling to 3769 feet. Magnolia Petroleum Company's Florey 1, which was the first producer on the west side of the Kilgore field to show water, has been placed on a larger choke because of an offset well that is making water having partially opened up in defiance of proration restrictions. Florey 1 produced 1143 barrels of fluid, 20 per cent b.s. and water, on 24-hour gauge late last week, flowing via three-quarter-inch choke against 190 pounds back pressure on tubing. The fluid registered 120 degrees temperature.

Safety measures adhered to by developers of townsite leases in Kilgore went amiss June 1 when National Security Oil Corporation's (Daniel & Patton) Knowles 1 caught fire while crew was re-conditioning the well, which was completed early in May. The production of this well recently declined to flow by heads. Four workmen were painfully burned by the fire.

East Texas Potential Set At 1,544,322 Barrels Daily

Tyler, Texas.—Withdrawal of The Texas Company as a general buyer of crude in East Texas effective June 2 may be the forerunner of similar policies being adopted by other majors in the troublesome area because of the failure of proration enforcement. Cancellation of price posting by this company also took place on the above date, thus leaving The Texas Pipe Line Company strictly on a common-carrier basis. The latter is moving about 50,000 barrels daily from East Texas via its system, and is short on capacity to take care of transportation business already booked for other shippers.

Official potential production of the three areas, comprising the East Texas district on May 15 was placed at 1,554,322 barrels from 720 wells by Chief Umpire Ray Richmond. Kilgore field's 314 wells registered a combined daily potential of 741,876 barrels based on one-hour test through three-quarter-inch choke on tubing, while the Joiner field was credited with a potential of 555,229 barrels from 296 wells, with wells gauged through open tubing. Longview field showed 257,217 barrels daily potential, based on one-hour flow through 11/16-inch choke on 110 producers. Actual potentials on choke were much greater in each area, as wells flowing open in violation of proration were credited with a daily potential of 100 barrels each.

The allowable production during the first half of June is 160,000 barrels daily for the three areas, but proration jumpers are causing actual yield to be more than double the quota.

Mills Bennett, Houston operator, has acquired the Gulf Coast Oil Company's (Moody-Seagrave) Palmer-Brightwell lease, consisting of 73 acres with four completed wells in the Kilgore field, for a reported consideration of $210,000, including cash payment of $75,000 and remainder from oil.

Lease Protection Forcing Many Companies to Drill

Tyler, Texas.—Protection acreage acquired on a large scale in East Texas during the early stages of development of the three areas has drawn many companies into major drilling campaigns contrary to wishes. Nine of the leading lease owners are carrying from 12 to 55 active operations each on current drilling reports, and with few exceptions all operations are limited to offsets on adjoining properties. These nine companies account for 228 of the 631 operations in the four counties sharing in the productive area as of June 1, or about 39 per cent of total current operations.

Humble Oil & Refining Company, Gulf Production Company and Magnolia Petroleum Company are the ranking operators in the district in the order named, while Shell Petroleum Corporation and Mid-Kansas Oil & Gas Company are moving forward with big drilling programs after having lagged behind in taking care of offsets. Humble Oil & Refining Company is repeating its history in the Corsicana-Powell field drilling rush to the extent of keeping abreast with neighboring lease owners. The latter has completed 48 producing wells without a junked hole, or failure, and has 55 operations on current field reports, including 22 active tests, 27 derricks and rigs, and six locations. Magnolia Petroleum Company has completed 28 producers and has 27 operations under way, or getting started in the four counties on proven acreage. Gulf Production Company was a late entrant in the flush section of the district, but has steadily gained momentum, with 36 completed wells and 26 operations in the come up list. Shell Petroleum Corporation's large leasehold in the three areas has required the drilling of 32 offsets, including three wells already on production. Mid-Kansas Oil & Gas Company has completed five wells and has 20 additional operations under way.

Tidal Oil Company has completed 12 producers and has a like number of tests under way, while Yount-Lee Oil

Company, a late arrival in the district, has 13 operations under way in addition to nine completed wells and a half interest in six completions credited in the accompanying table to Arkansas Fuel Oil Company. Sun Oil Company's many scattered leases in the district has resulted in five completions and 14 additional tests are under way.

Status of field work in the East Texas district of the nine most active operators follows:

Company—	Locations	Rigs and Derricks	Active Tests	Completed Wells	Total
Humble Oil & Refining Co...	6	27	22	48	103
Gulf Production Co.	2	13	11	36	62
Magnolia Petroleum Co.	10	8	9	28	55
Shell Petroleum Corp.	3	7	19	3	32
Mid-Kansas Oil & Gas Co.	7	2	11	5	25
Tidal Oil Co.	..	3	9	12	24
Arkansas Fuel Oil Co.	1	6	5	12	24
Yount-Lee Oil Co.	5	5	3	9	22
Sun Oil Co.	6	1	7	5	19
Total	40	72	96	158	366

East Texas Fields Produce More Than Double "Allowed"

Tyler, Texas.—Defiance of proration in East Texas reached greater proportions during the week ending 7 a. m. May 27 when a daily average of 350,889 barrels from 610 flowing and pumping wells was maintained, while during this period the allowable production was supposed to be only 160,000 barrels daily. Total oil recovery since completion of the discovery well on October 3, 1930, to the above date is placed at 20,006,100 barrels, and distributed among the three areas as follows: Kilgore 9,149,395 barrels; Joiner 7,004,080 barrels; and Longview 3,581,925 barrels.

Kilgore field maintained a daily average of 156,072 barrels from 283 flowing wells during the past week, and during the previous week averaged 124,265 barrels daily. Joiner field continues to work its way to higher levels, and during the past week averaged 123,000 barrels daily from 251 wells, with a number off production pending installation of pumping equipment. Longview field jumped its daily average from 61,510 to 71,017 barrels daily during the past week, with 86 flowing wells.

East Texas Production

Daily average production of the Joiner-Kilgore district and the Longview field is shown below, with total number of production wells included:

	JOINER-KILGORE		LONGVIEW	
Week Ending—	No. Wells	Daily Average Production	No. Wells	Daily Average Production
February 18	22	19,090	1	6,511
February 25	24	24,954	1	7,044
March 4	39	51,475	1	4,578
March 11	50	75,170	1	7,170
March 18	64	75,540	5	14,021
March 25	81	104,345	6	17,769
April 1	115	119,500	11	24,990
April 8	159	165,250	16	26,000
April 15	198	210,208	25	38,180
April 22	234	239,515	30	58,480
April 29	298	271,070	39	68,715
May 6	344	216,650	46	52,250
May 13	434	208,900	58	48,550
May 20	463	242,300	70	61,510
May 27	524	279,072	86	71,017

East Texas Operations

Expansion of field work in Rusk and Gregg Counties since the area reached important proportions is illustrated by the table below, showing operations on given dates:

Date	Locations	Derricks and Rigs	Active Tests	Totals
February 9	10	34	34	83
February 16	21	48	54	123
February 23	23	71	70	164
March 2	22	97	84	203
March 9	21	129	104	254
March 16	21	128	136	285
March 23	27	136	194	357
March 30	22	141	222	385
April 6	24	134	231	389
April 13	40	154	223	417
April 20	49	155	231	435
April 27	56	135	259	450
May 4	59	143	240	442
May 11	54	158	246	458
May 18	54	161	269	483
May 25	59	180	296	535
June 1	79	190	312	581

Lowered Price Promises To Curtail Drilling Orgy

Tyler, Texas.—Temporary peak in field work in the East Texas district is slated to be attained before the close of June owing to congested crude market conditions and collapse of the price structure, as the rank and file of small operators cannot maintain their current development programs in defiance of the above adverse developments. Rusk and Gregg Counties combined advanced to a new high mark on field development at the start of the present week by recording 581 operations, or 46 more than listed one week previous. These figures do not include 50 operations in Smith and Upshur Counties, which also have a substantial slice of the productive area overlapping from the above two counties. Included in the 581 operations on June 1 were 312 active tests; 190 derricks and rigs; and 79 locations.

Forecasting of a lull in field work before the close of June does not preclude the possibilities of a fresh start being taken later on drilling activity, as any appreciable improvement in crude oil sales in spot quantities and on contracts, as well as price adjustment for the better will be a signal for revival of drilling. The productive acreage is awaiting the drill, and same is in the hands of companies and individuals that desire action, but an economic situation is engulfing the smaller units in such a manner that work must be tapered off.

Arrow Refining Company on May 28 began operating its 2500-barrel refinery at Overton, Texas, and is making shipments of refined products over the International-Great Northern railroad. Its crude requirements are supplied from the Joiner field through the six-inch pipe line of Central Pipe Line Company, Fort Worth, an affiliated concern.

Shipments from the above refinery and from the plants of East Texas Refining Company and Beacon Oil & Refining Company, located between Overton and Henderson on the International-Great Northern railroad, now average around 30 tank cars daily. Each of the latter shipped out approximately 350 cars of refined products during May. East Texas Refining Company is also operating a plant east of Longview, and is making shipments from it over the Santa Fe railroad.

Shelby County Test Makes Two Heads From Austin

Henderson, Texas.—Sloane Prospecting Company and Tokio Oil Company's Windham 1, A. H. English Survey, Shelby County, East Texas, Monday afternoon made two heads of oil from 10 feet of broken chalk at 3389-3399 feet, tentatively identified as Austin. The first head at 1 p. m. was of five minutes duration and the other at 5 p. m. was of 12 minutes duration.

On Tuesday, June 2, a Layne and Bowler drill stem with packer was run in the hole in an attempt to make the well flow. Not enough of the oil from the heads could be recovered Tuesday to make a test of the gravity. A sample taken from the bailer previously, however, had tested 38 gravity at 80 degrees.

Elevation of Windham 1 is 307 feet. When this test had a show of oil in the Blossom in 22 feet of sand at depth of 2680 feet, 6⅝-inch casing was set at 2652 feet, the last casing cemented.

Shreveport.—Sloane Prospecting Company's Windham 1, A. H. English Survey, Shelby County, Texas, which several weeks ago showed some oil and gas in the Blossom, later salt water and finally bailing dry with a show of salt water, last week cored chalk showing oil from 3334 to 3341 feet but failed to get seat for a drill stem test. The well cored ahead and cored a broken chalk formation under shale from 3389 to 3399 feet, a large showing of light oil and of gas appearing on the ditch. At 3399 feet operators set 800 hundred feet of liner with 60 feet of perforated liner at bottom with a packer and bailed to top of the liner with a little oil and gas showing. Reaching top of the liner the operators improvised a three-inch bailer and tried to bail the liner, but mud filled the bailer and the test was shut down, while awaiting arrival of a sand pump. Before bailing commenced the well made several small heads around the drill stem.

The Texas Company's Brumble 12, John Womack Survey, Bethany gas field, Panola County, Texas, in the upper Trinity, was completed during the past week making two million cubic feet of gas and 400 barrels of salt water at 4751 feet. The gas sand topped at 4742 feet tested at that depth approximately one million cubic feet of gas and no water. This well had checked low compared to surrounding tests to the Trinity.

Harrison County added another dry hole to its list of failures since the drilling campaign that followed the discovery well in Rusk County started. Rowan and Nichols' Bussey 1, E. A. Merchant Survey, which topped Nacatosh at 1995 feet and Pecan Gap at 2310 feet, was abandoned in Georgetown lime at 3564 feet, with 24 feet of Georgetown.

Harrison County's first Trinity test was spudded during the last week, this being Ryan Consolidated Petroleum Corporation's H. H. Key 1, E. Carroll Survey, near Rosborough Springs.

Banner and associates, who claimed a core of sand showing oil in the Blossom from 2797 to 2805 feet and cemented 6⅝-inch casing at top of this sand, had a fishing job last week for the bailer and collar and finally had to mill out of the casing when salt water started to flow. The water was mudded off and the well will be continued in search of the Woodbine. Late Saturday the test was reported in gummy shale at 3148 feet.

C. H. Tautenhahn and associates during the past week erected derrick for J. G. Bogard 1, Thomas Baker Survey, Shelby County. Their block was assembled for the consideration of a 3900-foot test.

EAST TEXAS HIGHLIGHTS

▼ **By H. H. KING** ▼
Staff Representative

Lease Rack

Gulf Coast Pipe Line Company's pipe line gathering system in the Kilgore field with a 50-car capacity tank car rack on I.-G.N. Railroad at Poindexter has been leased by Nat Hunter Producing Company and Nat Hunter Oil Company. The latter two companies petitioned District Court in Austin, May 11, for an injunction to restrain the Texas Railroad Commission from enforcing proration on its properties in the Kilgore field, and are listed on the umpire's report on producers not adhering to proration. Nat Hunter Producing Company is a Dealware corporation, and N. N. Ollie, Esperson building, Houston, is agent for the company in Texas.

Building Rack

Pilot Oil Company, which is largely owned by Tom E. Cranfill and E. B. "Gene" Germany, Dallas, is erecting a 25-car capacity tank car rack on the I.-G.N. Railroad about three miles southeast of Overton in order to serve its completed wells in the northeast part of the Joiner field. Pilot Oil Company operated its pipe line systems in East Texas as the Independent Pipe Line Company until the former elected to flow its wells open.

Gulf Pipe Line Company is erecting a 55,000-barrel steel tank at the intersection of its East Texas gathering system and its Mid-Continent trunk line on the John Pate Survey, about 3½ miles north of Arp, Smith County.

I-G. N. Wins Suit

Efforts of J. W. Brightwell, land and royalty owner in the Kilgore field, and others to restrain the Texas Unity Oil Company and I.-G.N. Railroad from proceeding with the development of the latter's right-of-way in the field were refused by District Court Judge B. F. Dent at Palestine, May 27. The plaintiffs have announced through attorneys that an appeal on the injunction plea will be taken to the Court of Civil Appeals at Galveston. Texas Unity Oil Company has lease on about seven miles of the above railroad's right-of-way, and is paying the latter 25 per cent royalty on the gross revenue. One well has been completed.

Bottom Temperatures High

Series of bottom hole bomb tests given wells in the Kilgore field reveals a uniformly high temperature at the oil and gas horizon, and a rock pressure ranging from 1310 to 1520 pounds below the 3500-foot level. Insertion of a bomb at the 3625-foot level in Magnolia Petroleum Company's Florey 1, which was the first well in the district to make salt water with oil in any appreciable quantity, revealed a temperature of 162 degrees, and a rock pressure of 1520 pounds. Fluid produced at the time of the test revealed about 22 per cent emulsion. Humble Oil & Refining Company's Crim 20 was tested at 3555 feet, with an equally as high temperature, but showed pipe line oil, and a rock pressure of 1505 pounds. The latter company's S. S. Laird 1-B was reported last week as having registered 155 degrees temperature, and a rock pressure of 1310 pounds.

Injunctions Multiply

Operators and companies seeking relief from proration restrictions in East Texas through court injunctions continue to increase in number, and 15 lease owners have filed petitions in District Court at Austin in an effort to restrain the Texas Railroad Commission from enforcing its rudes. Limitation of production from wells is the only complaint raised by the

plaintiffs. Only one plaintiff has succeeded in getting an injunction, and that was the first one filed, having been sought by Carl Estes, Tyler editor, and associates. Ed. M. Jones, San Antonio, filed a petition, May 27, naming Ray W. Richmond, umpire, and Houston Oil Company, joint owner of leases with Ed. M. Jones, as co-defendants. Other plaintiffs follow: G. W. Hindman-S. G. Ward interests; H. Read, Amarillo, et al; R. G. McIntyre Drilling Company, San Antonio; H. F. Gibson, F. Kirk Johnson and John F. Merrick, all of Fort Worth; Horseshoe Lease Syndicate, Henderson; Luling Oil & Gas Company, San Antonio; Nat Hunter Producing Company and Nat Hunter Oil Company, Houston; Lide-Rowe Oil Company, Lide-Tayloe Oil Company, Bill & Dave Oil Corporation, all of Tyler; Macmillan Petroleum Corporation, Los Angeles; Central Pipe Line Company and Inland Waterways Pipe Line Company, both of Fort Worth.

Commission Files Suits

Seven producing companies in the East Texas district have been made defendants in suits filed by the attorney general's office for the Texas Railroad Commission for the collection of $1000 penalties daily for alleged violation of production rules. The following have been designated as violators: Horseshoe Lease Syndicate, Luling Oil & Gas Company, Pilot Oil Company, Cranfill-Reynolds Company, British-American Oil Producing Company, Hunter & Rowe, and Macmillan Petroleum Corporation.

Tyler Refinery to Start

East Texas' largest refinery is scheduled to make its initial crude runs early this week, according to officials of the Taylor Refining Company, which has completed first units of a 15,000-barrel skimming plant. The refinery is located near Tyler, and on the Cotton Belt Railroad, which has contracted for a large volume of fuel oil as an inducement for the plant being located on its line. Crude is supplied from the Joiner and Kilgore fields via the eight-inch pipe line system of the Tyler Pipe Line Company, an affiliated concern.

Ship to Fort Worth

Texas Pacific Coal & Oil Company began regular crude shipments from its completed well in the Longview field to its refinery at Fort Worth early this week, having provided a 10-car rack on the north side of the Texas & Pacific Railroad on the E. G. Richey land, Carl Rhodes Survey. A four-inch line connects the producing property to the rack.

Simms Plans Line

Simms Oil Company is reviving plans for the construction of a six- or eight-inch pipe line from Gregg County to its refinery at Dallas, and possibly an extension line to Fort Worth. A preliminary survey for such a project was made last April, with about 130 miles of line needed to deliver crude into Dallas, but work was abandoned when it became apparent that a reduced tank car oil tariff would be available on East Texas shipments to plants at Dallas and Fort Worth. Oriental Oil Company, a producer in the East Texas district, is shipping oil to its refinery at Dallas, and the allowable production of Texas Pacific Coal & Oil Company and Mid-Kansas Oil & Gas Company is also being delivered from East Texas to their plants in Fort Worth.

Pilot Building Rack

Pilot Oil Company is erecting a tank car loading rack in the Joiner district, the location being three miles east of Overton on the Overton-Henderson branch of the International-Great Northern railroad. The rack will accommodate 25 cars at a time, employing a single track. The railroad shipping point is known as Norfolk.

NORTH AND WEST TEXAS ▼ FIELD NOTES ▼

Posted Price Below Lifting Cost on 25,000 Small Wells

Wichita Falls, Texas.—Reduced crude prices introduced to operators in the North and Central West Texas district on June 1 by Stanolind Crude Oil Purhcasing Company falls short in equalling the average lifting cost per barrel of the 25,000-odd pumping wells in the district. Average lifting costs per barrel range from 30 to 40 cents per barrel, with a larger figure prevailing on some deep producing leases, while the new price schedule tapers off from 37 cents for 40 gravity and above to 25 cents for below 29 gravity.

Dewey Knox et al's wildcat test on the H. Bradshaw-Burkett land, where a new oil pool was established for eastern Young County in May, has been shut in pending arrangements for a pipe line connection. This wildcat producer made an initial flow of 80 barrels of oil and five barrels of salt water from oil sand at 2695-2713 feet, with a total depth of 2730 feet. It has a surface elevation of 1184 feet. It is located in the southeast corner of Lot 9, Section 3412, T.E.&L. Survey, and about three miles northeast of nearest production.

Casing is to be lowered to the bottom of the hole on F-H-E Oil Company's wildcat gasser on the H. C. Potts land, I. Southward Survey, Grayson County, to shut off upper water for a test of the gas production found May 20 in top of sand at 400 feet. The well caught fire May 29 while making about 1,500,000 cubic feet of gas daily, causing injuries to four workmen.

Plugging orders have been issued by The Texas Company for its wildcat test on the Johnson land, Foard County, with a total depth of 4005 feet. This test passed up several showings of gas in upper lime horizons that gave promise of commercial production. A new location has been staked for the drilling of L. K. Johnson 1, located 440 feet south and 560 feet east of the southeast corner of Section 38, S. P. Ry. Survey, but in Chris. Choate Survey.

Mid-Continent Holding Company is moving in heavy rotary to drill a 4000-foot test on its A. W. Burnside 200-acre lease, John M. Sharp Survey, Abstract 262, Wichita County.

25 Cents Flat Posted for West Texas-New Mexico Oil

San Angelo, Texas.—Twenty-five cents per barrel for West Texas crude, regardless of the quality and gravity, was posted effective June 2 by The Texas Company as a sequel to the shakedown of Mid-Continent crude prices on the day previous by Stanolind Crude Oil Purchasing Company and others. The Texas Company also applied the new record low quotation to its connections in New Mexico fields. Even at this low level West Texas and New Wexico crudes are nearer par with Mid-Continent crudes than at any time in recent years.

Shutting down of pumping wells on many properties in West Texas will be forced upon many operators by this recession in price, while those financially able and fortified with surplus storage plan to accumulate production for a better price offer. The latter procedure is possible on a large scale, as crude stocks in the district have been pulled on heavily during past six months.

Looking Over Our Shoulders

By GRADY TRIPLETT

BACK in January of 1921 the joint estimate of the American Association of Petroleum Geologists and the United States Geological Survey was that the petroleum reserves of the United States amounted to 9,150,000,000 barrels of crude oil. Although 10 years have served to make a mockery of such a total, it is only just to accept the estimate as accurate in the light of the knowledge possible to bring to the study.

At that time no man knew whether the figures were far short or far in excess of actual reserves. There is no doubt that the publication of the estimate played a large part in the efforts made in the past decade to uncover petroleum reserves. A part of that effort was the search for oil in foreign countries. American capital pushed its way into South America with success, if the accumulation of oil reserves may be designated as a success.

If the estimate of the reserves of the United States had been correct, if American capital had declined to spread its search into foreign countries; this present hour would have witnessed an American public dependent on foreign oil and at the mercy of foreign ownership of the oil.

Under this hypothetical condition, the wail that has been made in favor of tariff restriction on oil importation would have been but a faint murmur as compared with the censure that would have been heaped on the petroleum industry of the United States for its deliatory methods.

* * *

PREDICTIONS as to the trend of business prove only the futility of making predictions.

From the experience of economic readjustments, it is safe to cling to only one prediction:

When business is bad it gets better; when business is good it gets worse.

* * *

WHEN appearing before the Independent Petroleum Association of America at its annual meeting, E. B. Reeser, president of the American Petroleum Institute, asked what man ever had given approval to a proration program without the hope that his decision would result in a higher price for oil.

To add that his question brought no protest is as useless as it is to contend that the object of proration is not primarily one of higher crude oil prices. It may serve some legal technicalities to base the demand for proration on the prevention of waste and other high-flown phrases but the kernel of what is loved from the skies is that the predominate purpose of the independent oil producer in all that he does is to speed the return of the day when the ownership of an oil lease will not be a liability.

HEARD but not verified: That the Prairie-Tide Water deal is ready for the announcement . . . . That some of the major purchasers of crude oil have rescinded the long standing orders to decrease storage . . . . That some oil companies of good financial standing a few months back will cease to exist this year . . . . That proration is winning adherents from the ranks of those, who opposed it from the outset . . . . That much of the oil contracted for at below 25 cents will not be delivered . . . .

* * *

EXTREME disaster that it was, it seems a miracle that more lives were not lost in the Cole well fire near Gladewater. Good management and no doubt good luck left some crew members and all bystanders alive.

The Cole disaster followed the "Wild Mary Sudik" episode at Oklahoma City by a little more than a year. The fire at the Cole well brought fresh consternation at the thought of what would have been the death toll, had fire resulted in the work on the Sudik well. The day "Wild Mary" was tamed, a fire would have claimed perhaps 100 lives. Half that many worked around the well. Another half hundred gained permission to watch the work, despite the strict caution of the owning company.

H. F. Sinclair, chairman of the Sinclair Consolidated Oil Corporation, dropped his work in Tulsa on learning of the Cole disaster and hastened to East Texas. It was the tragic plight of Glenn Harroun, Sinclair district superintendent, to watch the fire, knowing that his brother Ray was one of the victims.

* * *

PERSONAL nomination for the outstanding leader of the petroleum industry—Wirt Franklin.

Whatever the opinion a man may hold as to the advisability of a tariff on oil, few will deny that Wirt Franklin has done an excellent job of furthering a cause which he believes sound. His sincerity, his methods and his progress in a work that seemed hopeless at the outset stamp him as a man who is worthy of the esteem in which he is held.

* * *

THESE hectic days again turn the spotlight on that hoary Victorian principle of business that a strong cash surplus is the final assurance of remaining in business. The several oil companies about which there is no doubt as to their remaining listed on the New York stock exchange are the few whose earnings since 1922 went largely into surplus, rather than into expansion.

The surplus is the reward of courage. It takes courage to shun expansion when others court the goddess of growth. Then more courage to expand when it is folly to spend.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Dry Hole Marks Eastern Limit of Pettus Field

San Antonio, Texas.—The failure of United Production Company's Ray 38 has turned Pettus field operators' interest to Ray 37, a mile or so southeast of Ray 38. Ray 37 is 3201 feet along the southeast line of the Willis A. Moore Survey from its extreme south corner, thence 996 feet northwest at right angles to that line. At last reports the well was drilling at 2705 feet in blue shale.

United Production Company's Ray 38 was dry. It was the last test on the east with tests spaced about three locations apart extending the Pettus field a mile eastward. There is a gasser, however, at about the same depth one and one-half miles east, and Ray 11 was a gasser at a little less than the Pettus depth one and one-half miles southeast. Ray 37 is 1500 feet northwest of Ray 11 and the log ought to tell a great deal concerning the geology of that section.

A mile southeast of the Pettus townsite, in northern Bee County, Ray 1, of Davis et al, hit the top of the Jackson at 2792 feet and is drilling below 2850 feet. According to reports the top of the Jackson in this well is running about normal with the producing wells on the Pettus townsite and is regarded as having a chance of making a producer.

San Antonio, Texas.—R. R. Ogden's Alexander 1, in Caldwell County, in the Dale area is a failure, developing sulphur water with a little oil in the Edwards lime. The well topped Edwards lime at 2330 feet and at 2338 feet had a good showing of oil and is fixing to make a test. The effort to get a drill stem test failed and casing has been set on a packer. It is located a little north of a test drilled by Reiter-Foster and is in a territory where a fault has been proven by a large number of tests drilled.

Mills McMahon 1, now drilling at 2430 feet, is located about one mile southwest of the Ogden test. McMahon 1 got the top of the chalk at 2115 feet and Ogden got the top at 2036 feet.

Valley Towns Offer Bonus For First Oil in District

San Antonio, Texas.—Announcement of three new tests to be started immediately followed a proposal that three upper valley cities contribute $5000 each for a bonus of $15,000 in cash to be given to drillers and drilling crew of the first producing oil well in Hidalgo County.

The proposal was announced when representatives of the Mission chamber of commerce joined in a conference with directors of the McAllen chamber of commerce. The city of Mission already has posted $5000 and backers of the movement sought to have McAllen and Edinburg chambers of commerce to offer a similar amount.

Any test coming in as a producer of 500 barrels or more of oil per day will receive the money, officials said. The offer would hold good for a gasser of comparative worth.

Two California firms are preparing to drill on leases 12 miles northwest of Mission. Dayle L. Smith Oil Company's Fernandez 5 is down to 4026 feet in the same vicinity and a group of Hidalgo County men, holding several thousand acres under lease west of Sam Fordyce, are reported to be contemplating drilling within a short time.

Eleven hundred acres are held under lease in the same locality by a Mission citizen and it is believed possible that activity may soon start on his lease. Another group in an upper valley city have several thousand acres leased, approximately halfway between Sam Fordyce and Rio Grande City, but thus far have preferred to hold their plans confidential.

Cole Field Extension Well Producing From New Level

San Antonio, Texas.—A new southeast extension of the Cole field in Duval County has been made by the bringing in of Magnolia Petroleum Company's W. Benavides 1, located 320 feet from the north and west lines of Survey 172. The well is reported to have a rock pressure of 1100 pounds and is estimated to be making about 30,000,000 cubic feet of dry gas daily.

In addition to extending the producing area of the field the well is also producing from an entirely new horizon, being considerably deeper than other production in the Cole field. The well topped the sand at 2455 feet and went into it 10 feet. The new well is just southeast of the O'Hearn-Seacord properties in the extreme southeast part of the Cole field.

Saxet Well Still Running Wild; Drilling Interesting

San Antonio, Texas.—A number of wells in the Saxet field of Nueces County show interesting conditions.

Maggie Harrell 1, of the Gulf Coast Oil Company, is waiting on cement at 4095 feet and Dunn 8 of the Saxet Oil Company in the same field is reported to be drilling the plugs and making other necessary arrangements to bring the well in at once. This well has a total depth of 4277 feet.

The Houston Oil Company's Harrell 2, in the northwest part of the Saxet field, is still running wild. The well blew in beyond control on May 19 at 2725-40 feet. Morgan 2, of the Houston Oil Company, is drilling in sticky shale at 4726 feet, and Hunter 1, of L. L. Smith, is drilling in hard sand at 4575 feet. Across the bay from the Saxet field at White Point, White Point Development Company 4 of Saxet Oil Company is drilling in shale and lime at 5712 feet. The latter well is in San Patricio County.

San Antonio, Texas.—Two wells have been completed in Williamson County in the Chapman pool. Ertel et al completed Abbott 11 at 1932 feet for 950 barrels a day initial production. It is one of the best wells in the field and topped the serpentine at 1600 feet and set casing at 1540 feet.

Ertel et al also completed J. C. Abbott 10 for an initial production of 35 barrels at 1947 feet, with top of the Serpentine at 1640 feet.

Good Oil Flow From Refugio Sand That Usually Yields Gas

San Antonio, Texas.—The Refugio field featured South Texas activity during the past week scoring the largest producer for that district for several months. The best well is Moody-Seagraves Producing Company's O'Connor 8, 1450 barrels from 6448 feet, with 1500 pounds of rock pressure. The feature of this well is that it is the first big oil producer in the 6400-foot sand. Most of the wells in that sand make mainly gas.

In the same field, United Production Company's Powers 6, completed for a 200-barrel well in the same sand at 6458 feet. Rock pressure was 1900 pounds.

Moody-Seagraves Producing Company's O'Connor 3 and 6 should be completed soon. O'Connor 6 already has the casing set at 6405 feet with total depth at 6416 feet and is waiting on cement while O'Connor 3 at 6442 feet showing both oil and gasoline.

Three Muckelroy Producers Have 250 Barrels Initial

San Antonio, Texas.—Three more producers have been completed in the Muckelroy pool of Zapata County. They made a combined initial production of 250 barrels.

Allied Oil and Gas Company and Allen and Morris' Gutierrez 15, offset to the recently completed Bateman producer, which extended the field three-fourths of a mile to the south, has been completed for 150 barrels daily from a total depth of 1485 feet.

In the main pool, Trevino Oil Company's Trevino 9 is making 50 barrels from a total depth of 1231 feet, and O. W. Killam's Bustamante 8 is making a like amount from a total depth of 1253 feet.

Completing Victoria County Gasser; Three-Mile Extension

San Antonio, Texas.—Three miles north of any other production in the Victoria County gas field, officials of the Slick Estate are preparing to bring in McFaddin 1, a rank wildcat, June 4. Liner was set June 1 on the well which is in the J. Barvian Survey.

The well is three miles north of the McFaddin wells of Lion Oil Refining Company. The Slick well showed for a big gasser on drill stem test when it had a sand at 3502 to 3512 feet, showing a pressure of 650 pounds. Simpson Fell Oil Company's Levi 1, also in Victoria County and approximately six miles northeast of the Slick well, is drilling at 4070 feet.

San Antonio, Texas.—Chavez 1, of Camp, and the Humble Oil & Refining Company, 10 miles south of San Antonio, in Bexar County, is dry and is being abandoned. It topped the Edwards lime at 2583 feet and was stopped at 2633 feet. The Edwards was reported to be absolutely dry and odorless.

The well is one of two Edwards lime tests which Camp and associates are to drill on the 7500-acre block which was taken up and core drilled last year by Humble Oil & Refining Company. The latter retains a half interest in the block and in case of production will be the operating company.

Vacuum Reduces Gulf Coast Schedule Paid at Lockport

Houston.—Reflecting in its action the weakening effect of the general crude market situation on the Gulf Coast price structure, particularly with respect to the higher gravity crude classed as grade "B," Vacuum Oil Company recently took the initiative in price reductions for the coastal region, lowering its schedule for purchases in the Lockport field, Calcasieu Parish, Louisiana, on May 27.

The new schedule posted by Vacuum Oil Company showed a reduction of from five to 26 cents a barrel for crude in the Lockport field. Grade "B" crude has been abolished from the price schedule altogether and all crude not measuring up to grade "A" will be purchased at a flat price of 55 cents a barrel. Grade "A" crude will be purchased for a flat price of 60 cents.

The former schedule posted in the Lockport field placed grade "B" crude on a gravity scale with 60 cents being paid for oil below 25 gravity, and two-cent differential up to 35 gravity.

Vacuum Oil Company made a statement in connection with the announcement to the effect that it had found itself unable to pay the prevailing prices for the grades of crude produced in the Lockport field because it was unable to market the oil at prices made necessary by the former prices.

Further statements in connection with the new schedule showed that it was necessary to abolish the graduated gravity scale for grade B, which is valuable only for its high gasoline content, for the reason that the oil could not be sold at current prices in competition with other more desirable gasoline crudes which are available at much lower prices.

Production in the Lockport field is handled by barges. Sun Oil Company and Vacuum Oil Company are the chief purchasers of crude in the field. Yount-Lee Oil Company's production is purchased by the Sun Oil Company while Vacuum Oil Company purchases all the production of Gulf Production Company.

New West Texas Production Find in Schleicher County

San Angelo, Texas.—Wildcat exploration work in the vicinity of El Dorado, Schleicher County, revived prospects of an oil producer being developed from the Pennsylvanian horizon during the past week when J. D. Wesner et al's R. E. Ratliff-Nicks filled 1500 feet with 31 gravity oil from brown sandy-lime at 4000-4006 feet, with a surface elevation of 2408 feet. This wildcat is located near center of Section 77, Block "LL," T.C. Railroad Survey. About 400 feet of water is standing in the hole from water formation passed up at 2940 feet. A string of 8¼-inch casing will be run to shut off this water horizon before deepening the hole. Several flurries have occurred in this section of West Texas in recent years when deep tests encounterd oil from the Pennsylvanian formation, but production tests exhausted the oil in several days.

Group One Oil Corporation's (Continental Oil Company) University 4-B, Big Lake field, resumed its former heavy yield of oil and gas production after successfully drilling by tubing that was lost while replacing a defective joint of casing several months ago. The hole was re-drilled to its former depth of 8587 feet, and when turned into the tanks the well gauged 200 barrels of 60.5 gravity at 46 degrees temperature, oil per hour. The flow has since steadily increased, as is customary on most deep wells in this field, and during the 24-hour period ending 7 a. m. May 31 gauged 7366 barrels oil and 64,748,000 cubic feet of gas, with 700 pounds back pressure on the casing. A string of tubing will be installed to reduce the gas-oil ratio.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

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Producer Is Completed on West Side of Barbers Hill

Houston.—One completion with the possibility of three more for the coming week marked the extent of operations in the Barbers Hill field during the past week. The Texas Company's E. H. Winfree 3, located on the west side of the field came in for an initial flow of 900 barrels at 5630 feet. The well is flowing through five-eighths-inch choke, making 32 gravity oil.

Humphreys Corporation's Anna Davis 1, situated on the northeast side of the field in the Henry Griffith League, hit a good show of oil after drilling into sand at 5312 feet. This well, as in the case of most of the wells on the northeast and east sides, drilled through approximately 1100 feet of salt before going back into the shale. Top of the salt in this well was hit at 1422 feet. The Texas Company's E. H. Winfree 2, Smith Survey, encountered a show of oil in sandy shale at 5570 feet and will likely set screen this week. Rio Bravo Oil Company's Fisher 2, on the west side of the field, is approaching the producing level of that area. The well is down 5270 feet in shale.

Caving of several of the wells on the west side of the field has slowed up activities in that section. Humphreys Corporation's Fitzgerald Meadows 1 hit a cavity at 1200 feet and is having trouble in cementing it. Mills Bennett Production Company has cemented the cavity in its Gulf Fisher 4 at 1320 feet and is now waiting for the cement to set. Drilling activities have fallen off greatly, and during the past two months over 25 per cent of the wells drilling in the Barbers Hill field have been shut down.

Houston.—Standard Oil Company of Louisiana has definitely abandoned location of its Gay 1 in the Bayou des Glaise field, Iberville Parish, Louisiana. Location of this proposed test was made March 22, 1930, on the northwest flank of the dome but was later relocated a short distance from the former site. No work was done toward rigging up for drilling the test.

The new location of Case 2 was made 760 feet north and 330 feet west of the southeast corner of Section 79-8s-8e, in Iberville Parish.

St. Tammany Parish Test Abandoned; Small Gas Show

Houston.—Washington & St. Tammany Drilling Company's second test in St. Tammany Parish, Coussack 2, has been abandoned in gumbo at 2031 feet. The test had been shut down at the final depth for three months after a fishing job was completed.

This company made its first location October 5,, 1929, in the northeast corner of Section 8-6s-10e, St. Tammany Parish, and finally abandoned that test in July, 1930, at 3954 feet in gray sandy shale. The location for the second test was made about two months later approximately one mile northwest of the original location and about four miles northwest of the town of Goodbee. Coussack 2 is located 1520 feet north and 200 feet east of the southwest cornore of Section 5-6s-10e.

The only encouraging results obtained in either of the tests was found in Coussack 1, when that test showed a small amount of gas at 2700 feet.

New Fort Bend County Field Given Pipe Line Connection

Houston.—Cullen & West's Lockwood 1, discovery well of the new Lockwood field, Fort Bend County, has been furnished an outlet for its production with the completion of a six-inch line connecting with Gulf Pipe Line Company's Big Creek line, eight miles north of the new field.

The new field was opened May 20 when Lockwood 1 came in for an estimated flow of 3000 barrels at 3089 feet. Production had to be pinched in for several days after the 1000-barrel storage tank had been filled until a line could be laid for handling the oil. The well at the middle of this week was flowing 2400 barrels of oil daily through one-half-inch choke, registering 450 pounds pressure.

Lockwood 1-A, the second test of the field, is rigging up and will be spudded in some time within the next two weeks. This test is located about 1300 feet southwest of Lockwood 1, 300 feet north and 300 feet east from the northwest corner of the Davis 619-acre tract in the John Rabb Survey.

Houston.—Rio Bravo Oil Company completed G. H. & S. A. 102, a work-over, in the Pierce Junction field last week for an initial flow of 600 barrels at a lower producing level of 4800 feet only to have the well quit producing at the end of the first day. The well has been put on the pump and is making a small amount of oil.

This well was completed in early April at 4440 feet for 70 barrels initial flow and was put on the pump at the end of the first week. Production declined so rapidly that the operators decided to drill to the 4800-foot level with the hope that more prolific production could be obtained.

Anderson & Plummer Production Company's Whitehead 4, also a work-over was put on the pump after being completed and is now making about 10 barrels daily.

Houston.—Milam County activities will be renewed with the taking over of the Red Bank Oil Company's lease by C. M. Joiner. The lease was accepted under the drilling contract specifying a 5200-foot test on the J. A. Foster 113-acre tract near Branchville, 16 miles northeast of Cameron. The operators have built a 122-foot derrick and machinery is being moved in preparatory to spudding in the test the last of this week.

Four wells in Milam County have been placed on the inactive list during the past two months with the closing down of Kisker et al's Ward 2 at 3080 feet in the Edwards lime. W. H. Elliott's Davis 1, is shut down in lime at 2150 feet and J. E. McKee's Littleton 1 is temporarily shut down at 650 feet. Paggi Brothers' Reed 1 drilled to a total depth of 2170 feet before it was shut down in chalk.

Louisiana--Arkansas Field Notes

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Smackover's First Deep Test Passes Usual Production Level

Shreveport.—The Urbana field of Union County, Arkansas, where deepest oil production in that state is found, was definitely extended a half mile northward during last week when Wilson and Chapman's Ned Parker 1, NW SE Section 3-18-13, was completed at 3565 feet flowing 268 barrels of clean oil daily by heads through 2½-inch tubing with four feet of sand. Six and five-eights inch casing was set at 3554 feet.

Possibility of a quarter-mile eastern extension in Marine Oil Company's P. Winn A-2, NW NW Section 11-18-13, was given a set-back when this well which had previously cored an oil sand from 3582 to 3586 feet, bailed and swabbed 80 per cent salt water and was temporarily abandoned at 3586 feet. Six and five-eights inch casing was set at 3579 feet.

Smackover's first 5000-foot test is now nearing an interesting stage, being below any oil production in Arkansas. Late last week this test, Lion Oil Refining Company and associates' Guy P. Hayes A-9, SW NE Section 4-16-15, Union County, was drilling blue sandy lime at 3659 feet. Lion is arranging to perforate Hayes A-3, SW NE Section 4-16-15, at the Nacatosh sand and to do the same thing to Hayes B-12, SW NW Section 3-16-15, at the Meekin sand.

Smitherman & McDonald's Bodcaw 1, SE NW NE Section 16-15-22, LaFayette County, which had shown considerable heavy oil at 1192-94 feet, was definitely abandoned during the past week as a salt water hole at 1199 feet, the salt water having broken through while bailing was in progress after the hole was deepened.

No new locations were made in Arkansas in the past week.

Zwolle Still Leads in North Louisiana; Two Completions

Shreveport.—Two producers, both small but both flowing wells, were completed in the southeast part of the Zwolle field during the last week. This area also continued to hold the lead in the North Louisiana territory in activity, five new locations being announced in the southeast part of that field.

W. M. Coates' R. L. Gay 2, NW SW NW Section 1-7-12, was completed at 2294 feet in Zwolle chalk, flowing an estimated 200 barrels of oil daily. Zwolle marl was topped at 2202 feet and chalk at 2290 feet. Six-inch casing was set at 2176 feet. Jordan Drilling Company's Louisiana Long Leaf 2, SE SW SE Section 3-7-11, is flowing at an estimated rate of 100 barrels daily from chalk at total depth of 2445 feet, six-inch casing having been set at 2350 feet.

New locations for southeast Zwolle during the last week were: H. W. Perritt's Bowman-Hicks 5, SW NE Section 2-7-12; Roy Baker's Sabine 1, NE NW Section 11-7-12; Ben Merritt, Trustee's Byrd 2, NE SW Section 1-7-11; Jordan Drilling Company's McCormick 1, SW SE Section 2-7-11; and Lyons and Neely's Duggan 1, NW SE Section 14-7-11. These comprised all the new locations in North Louisiana during the past week except two tests for the Richland gas field and a wildcat in the Spider district of DeSoto Parish where Walters and Nicholson have derrick up for Jim Guy 1, Section 3-11-13.

Two failures were recorded in DeSoto Parish during the past week. Deupree-Founatin's J. M. Nabors 1, Section 5-12-11, Naborton district, was abandoned as a dry hole at 2425 feet. Neff and Associates' Ramsey 1, Section 33-13-16, a wildcat, was dry and abandoned at 3081 feet.

In the southeast Zwolle field of Sabine Parish, Pelican Natural Gas Company's Louisiana Long Leaf 9, Section 3-7-11, was dry and abandoned at 2671 feet. North of the Zwolle east field, Durham Oil Company's Polly 1, SW NE Section 18-8-12 was abandoned as a dry hole at 2722 feet. This test reached base of the Zwolle chalk at 2595 feet.

Nemours Corporation completed a 3,197,000 cubic-foot gasser in McGough 1 Section 24-22-3e, Union Parish, Monroe gas field, at 2185 feet.

Drilling Continue Quiet In Mississippi Gas Area

Jackson, Miss.—Drilling activity continued quiet in Jackson during the week ending May 30. Early in the week Industrial Gas and Electric Company completed Illinois Central 1, NE SE Section 4-5-1e, Hinds County, as a mile west extension of the gas producing area. Its yield is estimated at 25 to 30 million cubic feet daily at total depth of 2468 feet, elevation being 280 feet. The well went five feet into the chalk.

Carter Oil Company has released back to the owners approximately 600 acres of Hinds County leases in Sections 36-6-1w, 13-5-1w, 20-5-1e, 22-5-1w and 28-5-1w.

Gulf Refining Company which recently took over Pope 1, NW NE Section 35-8n-16w, Covington County, South Central Mississippi, which had been temporarily abandoned in Wilcox at 3000 feet, to take it to 4500 feet, has cleaned out to bottom and is making hole below 3015 feet. This company is expected to announce a 4000 or 4500 foot test in Section 23-5-1e, Rankin County, within a few days. It is obligated to drill such a test under its purchase of Lion Oil Refining Company's holdings around Jackson several months ago.

Love and associates are preparing to change to a heavier rig in Muse 1, Section 32-7-4e, a wildcat in Rankin County, with intention of carrying the test to 5000 feet. Late last week the bottom of the hole was in black shale and boulders at 4000 feet.

Mosquero, N. M.—Another good showing of natural gas has been encountered in the test in the Bueyeros district, Northeastern New Mexico, being drilled by the Kumbaca Oil & Gas Company. Showing was found at 820-825 feet, and is the second to be found in the test. The gas is being investigated for helium content. First showing in this test amounting to 500,000 to 1,000,000 cubic feet per day was found at 285-287 feet in a red sand; the second flow was at 825 feet and gauged around 3,000,000 cubic feet. Both productions were mostly carbon dioxide. Well is to be drilled deeper.

Just Off the Press

PETROLEUM DICTIONARY

for

Office, Field and Factory

by

HOLLIS P. PORTER

Member of

American Society of Mechanical Engineers.
American Petroleum Institute.

FIRST EDITION

Before deciding to publish this dictionary, a thorough search was made by the author while preparing lectures to be delivered to the students of the Petroleum Engineering School of The University of Tulsa, which revealed that there was no publication which defined in a satisfactory manner many of the words and terms used in the several departments of the petroleum industry. It was also observed, that many employees in offices were in need of a ready reference which would give them some light as to the meaning of technical as well as non-technical expressions, and words so often found in correspondence by and between individuals of the several departments of the industry. These facts furnished the inspiration for this publication. It is often difficult, and in many cases impossible, even with the best library facilities to find definitions for many of the words which have recently been introduced. This may cause some difficulty in understanding the meaning to one unfamiliar with the subject, or, to a particular branch of the industry.

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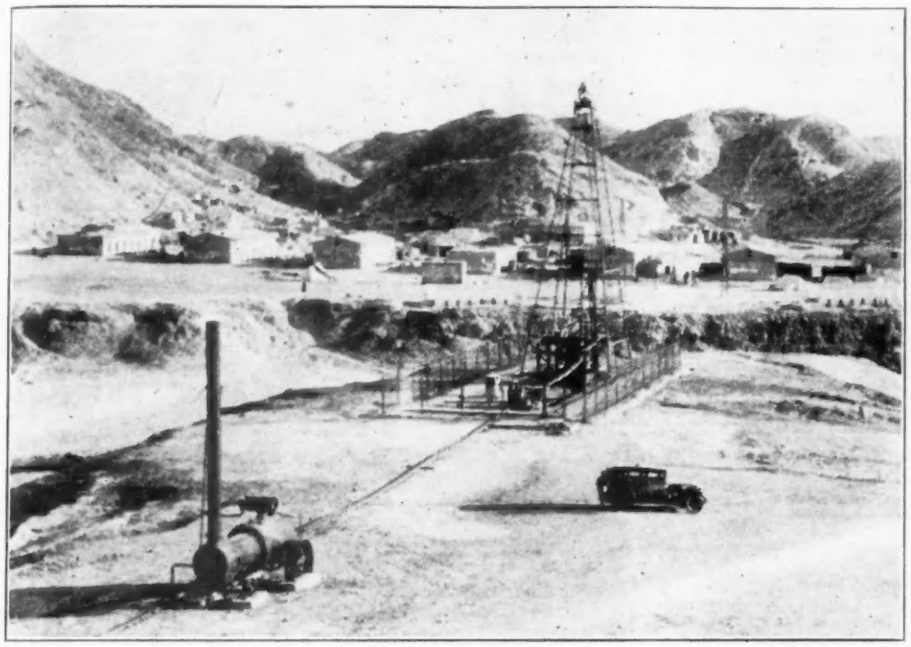
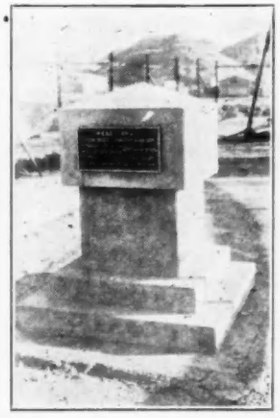


Discovery well in Maidan-i-Naftun Field, Masjid-i-Suleiman District, Persia. Anglo-Persian Oil Company has left the original rig, engine, and boiler in place, intact, and has erected a monument bearing an inscription giving the well's history



Monument to discovery well in Persia, bearing the following inscription:

"WELL NO. 1

Commenced
January 23, 1908

Struck Oil & Well Completed
May 26, 1908

Depth 1179 *feet*

Production 8000 *Gals. per Day.*

Iraq Pipe Line to Be Completed by 1935 The rapidity with which obstacles to the development of the Iraq Concession have been removed by legislative action and diplomatic compromise during recent months is nothing short of remarkable, considering former delays and postponements. Politics, war, and legislation,—or the lack of legislation,—have operated to keep this oil off the market for more than a decade,—indeed, its existence has been known since Biblical times; but here of late kings, presidents, premiers, and politicians have bestirred themselves with a harmony of purpose heretofore seemingly lacking in apparent effort to remove the last remaining obstacles to the commencement of exploitation of what is regarded as one of the richest undeveloped petroleum reserves in the world.

The French parliament, by action of March 28, 1931, finally ratified the assignment of the French share in the Iraq consortium unto the Compagnie Francaise des Petroles. The compromise agreement for the routing of the Iraq pipe line through French and British mandated territory has also been reported in these columns. An agreement between the Kingdom of Iraq and the Iraq Petroleum Company, Ltd., in regard to the fixing of annual minimum royalties, which gave a strong hint as to the volume of production expected to be developed, was outlined in this space two weeks ago.

Now comes news from Baghdad of the ratification by the Parliament of Iraq of a compact signed on March 24 between Sir John Cadman, chairman of Iraq Petroleum Company, and King Feisal's ministerial representatives which composes the most important point at issue between the various national, international, and industrial interests who have had to do with Mesopotamian oil,—that relating to the final selection of acreage and the construction of a pipe line under the Iraq Concession.

It will be remembered that Iraq Petroleum Company had a floating concession which might be applied to cover acreage selected after preliminary drilling; and that such selection was made under protest last year, it being the contention of the concessionnaire that its right of selection should be increased so to insure opportunity for unit operation and to forestall the possibility of offset competition and wasteful competitive drilling.

This amended application has now been granted, in part at least, as dispatches from Baghdad relate that the company has been granted sole rights to produce oil in the provinces of Mosul and Baghdad, lying east of the Tigris, for a period of 70 years ending in 1995. This agreement obligates the company, on its part to build a pipe line from Kirkuk, interior oil field center, to Haditha, near the Syrian frontier, branching thence to Haifa and Tripoli, which must be completed by 1935.

This agreement seems finally to clear the way for the opening up of the Baba Gurgar and other structures proven or partially proven by 10 years of drilling. Of equal importance is the prospect of the removal of the shadow of this floating concession which has hung over other provinces of the kingdom, provinces which may now be thrown open for development by other interests.

An economic and political situation is developing which may operate to accelerate the progress of oil development in Iraq, and perhaps also in Persia. Students of the international economic and political situation have in mind that a shift may occur shortly by which European and Asiatic markets hitherto

supplied in large part with Russian oils may come to be supplied with petroleum from Mesopotamia.

Companies now buying oil from the Soviets have a share in the Iraq concession. Iraq oil is nearer to European and Mediterranean markets than is Russian oil. Refineries now under construction in France are doubtless intended to handle Iraq oil upon their completion and upon completion of the Iraq pipe line.

A certain share in European and Asiatic markets is definitely assured to Iraq oil, by reason of the make-up of the Iraq Petroleum Company, an enterprise of political and international character, born in diplomatic chancelleries and including dominant British, French, Anglo-Dutch, and American oil interests.

Iraq and Persia may supply ammunition for use by these interests in event of another price war, an eventuality which seems inevitable if the expansion of Soviet exports is to continue in future as in the past.

Mexican Lawyers Seek to Revive Goose That Laid Golden Egg

Mexico City.—The First Judicial Congress, composed of leading members of the Mexican bar, adopted a resolution by its Committe on Petroleum Legislation recommending the revision of the Petroleum Law of 1925.

Shell Production Curtailed Eighteen Per Cent

Figures published in the annual statement of the *Koninklijke Nederlandsche Maatschappij tot Exploitate van Petroleum-bronnen in Nederlandsche Indie* (Royal Dutch Company) indicate that the Royal Dutch-Shell Group suffered a production loss of more than 10 per cent during 1930 as compared to 1929. It was explained, however, that these losses represent more the result of proration and curtailment than of depletion or natural decline.

Of all the Shell subsidiaries, the greater production losses were sustained by the American companies, Shell Oil Company and Shell Petroleum Corporation, whose total production declined 25 per cent from 7,583,552 metric tons (roughly 53,085,000 barrels) in 1929 to 5,700,000 tons (approximately 39,900,000 barrels) during last year. Preliminary figures indicate a decline of 11.83 per cent in Mexico, with slight losses in Sumatra, Jave, and Borneo, and also in Argentina. The Group's production in Roumania and Venezuela showed substantial increases, with lesser gains in Trinidad and Egypt. Gains from unit operated fields (Mene Grande and Rio Tarra) in Venezuela more than offset the loss sustained by curtailment of production in the competitive areas along the eastern shore of Maracaibo Lake.

Comparison of these totals with Bureau of Mines figures representing total world output indicate that Royal Dutch-Shell companies accounted for approximately 11¼ per cent of the world's total oil production during 1929 and 1930. During the same period, Shell Petroleum Corporation and Shell Oil Company produced less than five per cent of the American total of crude oil output.

Detailed figures collected by Dr. Wilhelm Mautner, Dutch correspondent of "Petroleum Zeitschrift" of Vienna, indicate the world-wide ramifications of Shell production operations.

Dr. Mautner's figures, although composed in part of preliminary estimates, compare closely with the Royal Dutch Company's official total of 23,980,027 metric tons (167,860,000 barrels) of oil produced during 1930.

[1]One metric ton assumed to be equivalent to 7 barrels.
[2]Estimated.
[3]Preliminary figures.

Shell Production 1929 and 1930
In Metric Tons[1]

	1930		1929
Netherlands Indies	4,580.292		4,746.426
Sarawak[2]	762.500		760.166
Egypt[2]	275.000		271.520
Roumania	1,035.103		852.372
Mexico (Aguila)[3]	1,810.000		2,052.925
Venezuela:[3] .			
a) V. O. C. 5,695.800		6,469.206	
b) Caribbean Pet. 2,868.600		2,330.341	
c) Colon Oil 706.600		—	
Subtotal (a—c)	9,271.000		8,799.547
Trinidad[2]	130.000		102.800
United States:[3]			
a) Shell Petr. Corp. ...3,000.000		3,602.835	
b) Shell Oil Co. 2,700.000		3,980.717	
Subtotal	5,700.000		7,583.552
Argentina	5.000		15.079
Total[3]	23,568,895		25,184,387

"These figures demonstrate what has been achieved by our whole-hearted cooperation toward conservation in respect to curtailment of production and increase of reserves. Otherwise the production would have been much larger, at least 29,000,000 tons (206,000,000 barrels)."

The annual report of the holding company for the year ended December 31, 1930, shows a similar decline in net income, returns for the year having totalled only 90,836,414 florins ($38,151,294) as compared to 126,471,391 florins ($53,117,984) in 1929.

Notwithstanding this, the report is optimistic in its general tone, its optimism being based on increasing consumption of petroleum products, lowered production costs, and the hope of better co-operation within the industry. Insofar as the company is concerned, reference was made to "more than ample cash resources of all our affiliated companies (more than $40,000,000)." As regards the industry in general, it was said that "Co-operation in the restriction of production will help the industry to tide over the most difficult period it has yet known and will bring it forth healthy and strong into a future that can be nothing but a bright one for the petroleum industry."

Reference was made to the restriction of output in the United States and other countries, and to current discussions looking toward a new conservation agreement in Roumania to take the place of the restriction arrangement abandoned on December 1.

The normal development of modern life and technical improvements in industrial processes were cited as guarantees for an ever-increasing demand for petroleum products in more and more varied forms.

Sir Henri Deterding's well-known theories regarding the present condition of the industry were reiterated in this report, in which it was said that unsatisfactory prices are attributable to under-consumption rather than to over-production, a condition affecting all commodities, the major causes of which are the collapse of silver exchange and outlaw industrial methods of Soviet Russia. The decline in the purchasing power of silver has limited the oil consumption of millions of people; and the normal demands of 150 million Russians are denied in order that oil may be exported and dumped into flooded external markets to secure gold or sound foreign currency for the execution of the Five-Year Plan.

Permits Granted for New Wells

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For Tabulation and Comparison See Market Section

CALIFORNIA

COALINGA—W. L. Denton, No. 8, 26-20-14.

COLUSA COUNTY—Smith and Vickers, No. 1, 28-16-2.

INGLEWOOD—Rosenberg and Robbins, No. 9, 7-2-14. Staidard Oil Co., L. A. I. 1-66, 17-2-14.

LOS ANGELES COUNTY—McCoy and Associates, No. 8, 28-4-13; No. 13, 28-4-13. Geo. J. Tighe, No. 1, 28-4-13. McCoy and Associates, No. 14, 28-4-13; No. 15, 28-4-13; No. 16, 28-4-13.

KETTLEMAN HILLS — Superior Oil Co., Huffman 3, 29-21-17.

MIDWAY—Hugh B. Evans, Inc., No. 11, 35-32-23; No. 12, 35-32-23; No. 15, 35-32-23.

MT. POSO—General Pet. Corp., Heisen 27, 16-27-28.

ORANGE COUNTY—McGowan & Thomas, No. 1, 20-5-11; No. 2, 20-5-11. M. D. Skroopka, Skroopka 1, 20-5-11. Walter F. Larson, Cavanaugh 1, 20-5-11. R. R. Richey, No. 1, 20-5-11; No. 2, 20-5-11. Eleanora D. Sellery, No. 1, 20-5-11. Albert C. and Eleanora D. Sellery, No. 1, 20-5-11. R. W. Manker, Manker 1, 20-5-11.

SANTA BARBARA COUNTY — Universal Royalties, No. 1, 28-4-27. Charles Stark, Ross 1, 28-4-27; Nye 1, 28-4-27.

TORRANCE—Cone & Smith, K-G 2, 6-4-14; K-G 3, 6-4-14.

VENTURA—Ssociated Oil Co., Lloyd 111, 27-3-23; Lloyd 109, 26-3-23.

KANSAS

COWLEY COUNTY—Fine et al, Wallace 1, sw c 28-32-4e.

McPHERSON COUNTY—McPherson O&G Dev. Co., and Shell, Wallace 2, c nw sw 12-19-2w. McPherson O&G Dev. Co. and Shell, Giffin 2, c sw nw 14-19-2w. Stearns and Streeter and Derby Oil Co., Chinberg 1, se nw nw 15-19-2w. Lario O&G and Shell, Suffield 3, ne c se 25-19-2 west. Olsen Drlg. Co. and Shell, Koehn 3, sw c, 36-19-2w. Harris and Haun et al, Overman 1, nw ne se 20-19-1 west. Magnolia Pet. Co., Klassen 1, nw ne nw 21-19-1w. Mohawk O&G et al, McGill 1, sw c ne 7-20-1w.

RICE COUNTY—J. R. Robertson, Rainey 1, sw c 3-21-6w.

SEDGWICK COUNTY — Shell Pet. Corp., Fisher 7, (owd) nw c se 15-26-2e.

OKLAHOMA

ATOKA COUNTY—Edgerton et al, Rolland 2, se c ne 6-1n-15e.

COTTON COUNTY—Shasta Oil Co., Moore 5, sw cor ne sw 2-2s-10w.

CREEK COUNTY — Magnolia Pet. Co., Boone 8 (owd) c n½ sw se 34-17-7e. Cal-Cul Oil Co., Holleyman 1, se c ne se 18-14-7e.

LATIMER COUNTY — Limestone O&G, Thurston 1, c sw ne 15-5-18e.

MURRAY COUNTY—C. P. Williams, Williams 1, c nl ne ne 21-1n-4e.

MUSKOGEE COUNTY — Roy Reed et al, Stidham 1, (owd) ne c nw ne se 8-15-18e.

OKLAHOMA COUNTY—Slick Estate, Central 5, nw c ne se se 3-11-3w; Slick Estate, Central 4, sw c ne se se 3-11-3w; Slick Estate, Central 3, nw c se se se 3-11-3w.

OKMULGEE COUNTY—McDonald et al, Tiger 2, (owd) ne c se se 24-16-13e. Shamblin and Smith, Sharp 1, sw c se 31-16-12e. Eagle-Picher Lead & Zinc Co., Mitchell 1, (owd) ne c se sw se 27-12-12e.

PITTSBURG COUNTY—Utilities Producing Co., Carney 4, sw nw sw 9-7-18e.

LOUISIANA

BOSSIER PARISH — Harry I. Morgan, Shreveport, Kendricks A-13, 22-19n-11w, 1004 ft n and 611 ft w of se cor of section.

CALCASIEU PARISH—Vacuum Oil Co., Houston, G. W. Farquhar A-5, 8-10s-9w, 110 ft e and 102 ft s of nw cor sw¼ of ne¼.

IBERIA PARISH—Jefferson Lake Oil Co., New Orleans, Lake Peigneur 13, 58-12s-5e, 150 ft n of Well No. 1, —S 84° w 3100 ft thence 150 ft n from ne cor of sec; Lake Peigneur 14, 58-21s-5e, 150 ft w —nw of Well No. 11; Lake Peigneur 15, 58-12s-5e, 300 ft w —nw of Well No. 11; Lake Peigneur 16, 58-12s-5e, 150 ft e of Well No. 1. La. Ld. & Exploration Co., New Orleans, Vermillion Bay 7, 20-15s-6e, 18,350 fe e and 900 ft s of cor of Sec. 20 in Vermillion Bay.

IBERVILLE PARISH—Amended Location —Std. Oil Co. of La., Schwing Lbr. & Shingle Co. 7, 74-9s-10e, 1359 ft n and 1856 ft center of sec.

RICHLAND PARISH—Pelican Nat'l Gas Co., Shreveport, Chapman 2, 14-16n-6e, 660 ft n and 660 ft w s¼ cor of sec.

RICHLAND PARISH—State Line O&G Co., Houston, Holdness A-1, 10-16n-6e, 1062 ft e and 760 ft n sw cor of sec.

SABINE PARISH — Hawkins & Antoon, Natchitoches, Newton 1, 1-7n-11w, 541 ft n and 150 ft e of sw cor se¼ of ne¼. Lyons & Neely, Shreveport, A. S. Byrd 1, 1-7n-11w, 250 ft n and 563 ft w of se cor ne¼ of se¼; A. S. Byrd 2, 1-7n-11w, 600 ft n and 175 ft w of se cor of sw¼.

TEXAS

ARCHER COUNTY—A. B. Harmonson, Ft. Worth, W. P Harmonson, 100, 1, J. B. Hinds sur, 1427 ft from w and 1200 ft from s line. W. H. Fraser Wichita Falls, W. M. Coleman, 84, 1, S 81, Amer. Trib. sur, 150 ft from n and e lines. F. J. Darr, Wichita Falls, B. Z. Lyle, 40, 1, S 2, S. P. Ry. sur, 150 ft from w and 160 ft from s line. Petroleum Prod. Co., Wichita Falls, C. Prideaux, 80, 1, S 2, BBB&C sur, 750 ft from e and 150 ft from s line.

BEXAR COUNTY — Mitchell & Ingersoll, San Antonio, E. B. Carruths, 100, 1, 150 ft s of center of n line. W. R. Swearingen et al, San Antonio, J. E. Halbardier, 73, 5, No. 57, J. Perez sur, 2880 ft from w and 150 ft from s line.

BRAZORIA COUNTY—Texas Co., Houston, W. T. Belcher, 358, 1, H. N. Little sur, 157 ft from nw and 223 ft from sw line, lot 18.

CALLAHAN COUNTY—Whiteley, Sinclair & Sample, Baird, E. L. Finley, 80, 1, S 10, D&D Asy. sur, 600 ft from e and 800 ft from s line.

CHAMBERS COUNTY—Sun Oil Co., Beaumont, P. Higgins, 10, 1, Wm. Bloodgood sur, 250 ft from e and 50 ft from s line.

CHEROKEE COUNTY—Rowan & Nichols Oil Co., Fort Worth, W. T. Norman, 146, 1, J. H. Irby sur, 364 ft from e and 1138 ft from s line.

COLEMAN COUNTY—Taylor-Link Oil Co., San Antonio, J. L. Stewardson, 80, 3, S 94, E. T. Ry. sur, 1323 ft from w and 200 ft from s line. J. C. Shaffer, Coleman, L. L. Shield, 550, 1, S 272, W. H. Bynum sur, 200 ft from s and w lines. C. C. Harpham, Brownwood, Wm. Pollard, 95, 1, P. Young sur, 827 ft from n and 150 ft from e line, blk 5.

ELLIS COUNTY—Worthen Pet. Co., Dallas, M. Cerf, 227, 1, Mullican sur, 150 ft from n and w lines.

GREGG COUNTY—M. T. Flanagan, Longview, A. J. Green, 41, 2, G. W. Hooper sur, 240 ft n of No. 1. Roeser and Pendleton, Inc., Fort Worth, A. Christian, 31, 1, H. Hathaway sur, 308 ft from w and 150 ft from s line. Lucey Pet. Co., Dallas, McHaney, 40, 1, H. Hathaway sur, 150 ft from n and w lines. Republic Prod. Co., Dallas, C. Fisher, 50, 3, J. Ruddle sur, 1081 ft from n and 200 ft from w line. Arkansas Fuel Oil Co., Shreveport, F. K. Lathrop, 92½, C2, Wm. Robinson sur, 300 ft from s and e lines. J. W. Harrison, 30, B1, G. W. Hooper sur, 170 ft from w and 160 ft from s line. Byrd-Frost, Inc., Dallas, W. Smith, 39, 1, J. S. Caruthers sur, 200 ft from e and 150 ft from se line. M. B. Andrews, 25, 1, W. F. Hyde sur, 150 ft from s and w lines; 2, 150 ft from n and e lines. Texas Company, Shreveport, J. M. Dickson, 88, 1, Wm. McCurry sur, 330 ft from n and e lines. Max Kirk, Wichita Kans., XC. C. Clemmons, 21½, 1, D. Sanchez sur, 289 ft from s and w lines. Edson Pet. Co., Houston, E. S. Hagler, 11, 1, J. S. Caruthers sur, 167 ft from ne and 175 ft from s line. East Texas Refg. Co., Dallas, E. Mitchell, 15, 1, M. Van Winkle sur, 250 ft from w and 200 ft from n line. Magnolia Pet. Co., Dallas, J. C. McKinley, 40, 3, D. Sanchez sur, 150 ft from s and w lines. M. T. Cole, 104, 1, T. Johnson sur, 150 ft from n and w lines. W. E. Jones, 116, 1, D. Sanchez sur, 150 ft from n and 162 ft from w line; 2, 150 ft from n and w lines. H. C. McKinley, 40, 2, D. Sanchez sur, 102 ft from e and 232 ft from s line. Julius Livingston, Tulsa, E. S. Hagler, 10, 1, W. P. Chisum sur, 170 ft from w and 150 ft from s line. H. E. Williams, Longview, A. Bean, 2½, 1, M. Van Winkle sur, 150 ft from e and w lines. R. C. Showalter, Tyler, W. Christian, 8¼, 1, Hooper sur, 245 ft from n and 363 ft from w line. Sun Oil Co., Dallas, J. R. Beall, 180, 1, D. Sanchez sur, 330 ft from w and 150 ft from s line. Heep Oil Corp., Houston, S. B. Hall, 50, 1, D. Dainwood sur, 155 ft from n and e lines. Alco Royalty Co., Tulsa, R. K. Johnson, 20, 1, D. Sanchez sur, 150 ft from n and w lines. Humble O & R Co., Houston, J. A. Knowles, 100, 3, M. Van Winkle sur, 160 ft from n and 150 ft from w line. S. S. Laird, 127, B4, M. Van Winkle sur, 260 ft from n and 250 ft from w line. Cranfill & Reynolds, Houston, S. Scott, 37½, 2, D. Dainwood sur, 326 ft from w and 450 ft from s line. Clayton, 40, 2, L. B. Outlaw sur, 306 ft from w and 330 ft from n line. M. Finn, 28, 1, H. Edwards sur, 202 ft from w and 237 ft from s line. Empire G & F Co., Wichita Falls. E. Muckleroy, 30, 1, J. S. Caruthers sur, 150 ft from n and 309 ft from w line. Shell Pet. Corp., Dallas. E. W. Willoughby, 58, 1, M. Van Winkle sur, 150 ft from se and 396 ft from s line. M. H. Bivins, 34, 1, J. S. Caruthers sur, 330 ft from e and 413 ft from s line. J. Douglas, 74½, 1, W. P. Chisum sur, 330 ft from s and e lines. W. W. Elder, 145, 1, J. S. Caruthers sur, 425 ft from n and 330 ft from e line; 2, 400 ft s of No. 1; 3, 330 ft from s and w lines. W. W. Elder, 40, 4, J. S. Caruthers sur, 330 ft from w and 410 ft from n line. J. A. Knowles, 65, 2, J. M. Norris sur, 150 ft from s and e lines. H. T. Beall, 41½, 1, M. Van Winkle sur, 330 ft from w and 259 ft from s line. G. W. Richey, 1, Wm. Carleton sur, 150 ft from s and e lines. Iowa-Payne Oil Co., Marshall, W. B. Walker, 53, 1, E. H. Gresham sur, 375 ft from w and 450 ft from s line. Kilgore Producers, Longview, T. Elder, 4, 1, M. Van Winkle sur, center. Kirk & Birkett, Wichita, Kans., J. Waddell, 20½, 1, H. R. Hokit sur, 155 ft from s and e lines. Dyke Oil Co., Tyler, J. M. Christian, 36, 1, G. W. Hooper sur, 150 ft from n and 197 ft from e line. Trapshooter Reilly O & R Co., San Antonio, E. Mitchell, 17, 1, J. S. Caruthers sur, 150 ft from s and w lines. G. W. Hindman, Longview, J. M. Blackman, 10, 1, W. P. Chisum sur, 173 ft s of center of n line. H. S. Moss, Dallas, F. Marshall, 40, 1, M. Van Winkle sur, 200 ft from s and w lines. Heyser & Heard, Corpus Christi, Heineman, 45, 1, G. W. Hooper sur, 150 ft from s and w lines. L. Y. Tuttle, 24½, 1, Wm. Castleberry sur, 387 ft from n and 375 ft from e line. Gulf Prod. Co., Houston, Lacy-Snider, 100, 1, W. H. Castleberry sur, 330 ft from s and w lines. M. B. Hughey, 50, 2, P. W. Warraner sur, 330 ft from w and 150 ft from s line. S. G. Andrews, 75, 1, W. F. Hyde sur, 330 ft from n and e lines. W. B. Goyne, 31, 1, J. T. McDaniel sur, 330 ft from s and e lines. L. D. Crim, 70, 2, W. P. Chisum sur, 596 ft from n and 259 ft from w line. A. Laird, 60, 4, W. P. Chisum sur, 864 ft from w and 169 ft from n line. B. Watson, 78, 3, J. S. Caruthers sur, 1744 ft from e and 330 ft from s line.

HARRIS COUNTY—J. C. Baldwin et al, Houston, Krahn, 25, 1, A. Bahr sur, 250 ft

from w and 175 ft from s line of sur. Rio Bravo Oil Co., Houston, J. J. Settegast, A, 125, A22, J. Kopman sur, 500 ft s of No. A21. GH&SA, No. 4, 102, S, 1028 BBB&C sur, 50 ft e of No. 101. O. G. Taylor et al, Houston, E. M. Isaacks, 1½, 1, J. B. Jones sur, center.

HARDIN COUNTY — Acorn Oil Co., Beaumont, W. E. Brice, ½, 5, Knight sur, 39 ft from e and 42 ft from s line. Paraffine Oil Co., Houston, Fee, 12, 90, Green sur, 74 ft from w and 180 ft from n line. Rio Bravo Oil Co., Houston, Fee, 158, C116A, J. F. Cotton sur, 200 ft n and 40 ft e of No. 115A.

HARRISON COUNTY—Rowan & Nichols Oil Co., Tyler, M. O. Bussey, 125, 1, E. A. Merchant sur, 1143 ft from n and 760 ft from w line.

JIM WELLS COUNTY—Gulf Prod. Co., Houston, R. Shaeffer, 4, G. M. Ridgeway sur, 249 vs from sw and 903 vs from se line.

LIBERTY COUNTY—Cranfill & Reynolds, Houston, Esperson, 676, 19, C. W. Fisher sur, 400 ft e of No. 9. J. R. Ingram, Houston, C. T. Palmer, 347, 1, Jos. Fenner sur, 1000 ft from w and 850 ft from s line.

LEON COUNTY—Sun Oil Co., Dallas, M. E. Grayson, 229, 2, M. C. Marques sur, ne corner.

LOVING COUNTY — Harry Adams Co., Midland, A. W. Lewis, 40, 1, S 84, B 1, W&NW sur 330 ft from ne and nw lines of e¼.

MONTGOMER YCOUNTY—H. W. Lowrie, Jr., Denver, Colo., G. J. Sunday, 266, 1, C. Wickson sur, 630 ft from w and 2098 ft from s line.

NACOGDOCHES COUNTY—R. R. Osborne et al, Tyler, C. M. Cooper, 55, 1, J. Windsor sur, 300 ft from n and 234 ft from e line. Fain-McGaha Oil Corp., Wichita Falls, J. L. Pirtle, 320, 1, J. H. Everett sur, center of se¼.

NUECES COUNTY — Southern Crude Oil Pur. Co., Fort Worth, C. E. Stratton, 480, 1, S 12, P. Ancho sur, 1650 ft from e and 330 ft from s line sec.

PECOS COUNTY—Dittman Oil Co., Fort Stockton, W. A. Sanford, 80, 1, S 55, B 10, H&GN sur, 150 ft from n and 330 ft from w line.

PALO PINTO COUNTY — Brazos River Gas Co., Mineral Wells, Edmondson, 18, F. H. Gray sur, 1200 ft nw of No. 17. W. J. Wickens et al, Strawn, W. Ready, 3, 1, B 16A, Strawn sur, 150 ft from n and e lines.

RUSK COUNTY — Golding & Murchison Oil Co., Wichita Falls, D. B. Reed, 11, 1, R. W. Smith sur, 155 ft from n and 150 ft from e line. C. H. Lyons, Shreveport, D. Ladd, 2½, 1, H. Hobson sur, 170 ft from n and e lines. Martin & Sladek, Tyler, R. F. Russell, 17½, 2, T. J. Martin sur, 194 ft from n and 560 ft from e line. Nelson & Lee, Henderson, J. W. Wheelis, 15, 1, F. Cordova sur, 150 ft from n and e lines. Champlin & Bass, Inc., Holdenville, Okla., Alford, 7, 1, F. Cordova sur, center. East Texas Refg. Co., Dallas, Jno. Bell, 30, 1, S. P. Hollingsworth sur, 250 ft from s and w lines. Mid-Kansas O&G Co., Tulsa, J. R. Beall, 80, 3, W. P. Chisum sur, 200 ft from s and w lines. J. M. Blackman, 79, 3, W. P. Chisum sur, 643 ft from n and 158 ft from w line; 2, 657 ft from e and 340 ft from s line. Sinclair O&G Co., Fort Worth, W. D. Kinney, 67½, 2, J. B. Cadena sur, 200 ft from s and e lines . W. D. Kinney, 123, 3, J. B. Cadena sur, 200 ft from s and e lines. Stantex Pet. Co., Oklahoma City, J. R. Brightwell, 11, 2, R. Smith sur, 182 ft from w and 200 ft from s lines. Corrected Location. Navarro Oil Co., Houston, J. N. Peterson, 2, I. Ruddle sur, 250 ft from n and 200 ft from w line. Humble O& R Co., Houston, M. Wooster, 70, 1, W. H. Bears sur, 384 ft from s and 330 ft from e line. R. H. Laird, 112, 2, W. P. Chisum sur, 150 ft from n and e lines. S. A. Plowman, 228, 2, F. Cordova sur, 279 ft from e and 200 ft from s line; 3, 320 ft from w and 445 ft from s line; 4, 320 ft from e and 1281 ft from s line. J. H. Wooley, 200, 2, F. Cordova sur, 320 ft from e and 445 ft from s line. P. R. DeGuerin, 12, 1, 1, T. J. Martin sur, 450 ft from n and 300 ft from e line. J. N. Peterson, 12, 6, I. Ruddle sur, 890 ft from s and 120 ft from e line. L. D. Crim, 212, 24, W. P. Chisum sur, 150 ft from n and 500 ft from w line. J. H. Silvey, 100, 2, Geo. Berry sur, 330 ft from n and w lines. First State Bank, 80, 1, Jno. Smith sur, 330 ft from s and w lines. J. E. Sexton, 70, 1, Martin-McCabe sur, 300 ft from n and 550 ft from w line. H. Sexton, 100, M. McCabe sur, 550 ft from e and 300 ft from s line. P. R. DeGuering, 121, 3, T. J. Martin sur, 2035 ft from n and 439 ft from e line. S. S. Laird, 230, A10, I. Ruddle sur, 665 ft from n and 330 ft from w line. S. S. Laird, 230, A9, M. Van Winkle sur, 330 ft from nw and 875 ft from sw line. Acme Gas & Oil Co., & Phillips, Tyler, E. L. Pinkston, 20½, 1, M. J. Pru sur, 150 ft from n and 236 ft from w line. Tidal Oil Co., Fort Worth, M. Thompson, 79, 2, J. Darley sur, 384 ft from n and 330 ft from w line. J. F. Shaw, 86, 2, F. Collard sur, 380 ft from n and 330 ft from e line of sur; 1, 360 ft from w and 475 ft from s line. L. J. Pinkston, 131, 2, F. Cordova sur, 220 ft from w and 425 ft from s line; 1, 272 ft from e and 250 ft from s line. Corrected Location. Gulf Prod. Co., Houston, O. H. Grissom, 57, 2, F. Cordova sur, 330 ft from s and e lines, New Locations. R. Russell, 41, 2, R. W. Smith sur, 150 ft from n and e lines. W. P. Keeling, A, 53, 3, F. Cordova sur, 330 ft from n and w lines. W. P. Keeling, 40, 2, F. Cordova sur, 330 ft from s and w lines; 1, 330 ft from n and w lines. L. P. Thrash, 76, 2, F. Cordova sur, 330 ft from e and 390 ft from s line. C. M. Jernigan, 100, 2, W. W. Simms sur, 413 ft from e and 330 ft from s line. Shell Pet. Corp. Dallas, T. H. Gill, 83, 1, R. W. Smith sur, 260 ft e of center of w line. A. Holt, 69, 1, D. Clark sur, 150 ft from n and w lines. J. S. King, 55, 1, W. P. Chisum sur, 150 ft from w and 185 ft from e line. R. Russell, 126, 1, R. W. Smith sur, 170 ft from n and 250 ft from e line; 2, 321 ft from w and 1040 ft from s line; 3, 189 ft w of center of e line; 4, 330 ft from n and w lines. J. B. Watson, 100, 2, J. S. Caruthers sur, 150 ft from s and e lines. T. Wells, 26, 1, H. Hobson sur, 347 ft from w and 150 ft from s line. C. L. McMahon, Tulsa, S. S. Laird, 45, 2, R. W. Smith sur, 150 ft from s and e lines. D. Wills, 41½, 2, W. P. Chisum sur, 150 ft from n and 165 ft from e line. Federated Oil Co., Wichita Falls, W. W. Holland, 41, 1, B 3, M. J. Pru sur, 200 ft from s and w lines. Kirby Pet. Co., Houston, J. Raddic, 96½, 1, T. Grace sur, 150 ft from n and w lines. Republic Prod. Co., Houston, H. P. Leverett, 109½, 2, W. W. Sims sur, 278 ft from n and 150 ft from w line. L. P. Thrash, 40, 1, F. Cordova sur, 300 ft from s and e lines. Great Eastern Oil Co., Dallas, E. B. Alford, 7½, 1, T. J. Moore sur, 150 ft from n and 204 ft from w line. Mayfield-Alford, 2½, 1, B 54, T. J. Moore sur, 120 ft from n and 150 ft from w line. Tip DeArman, Tyler, L. P. Thrash, 12½, 1, F. Cordova sur, 300 ft from n and w lines. J. C. Wynne, Wichita Falls, C. Young, 10, 1, M. J. Pru sur, 150 ft from w and 154 ft from s line. Lion O & R Co., El-Dorado, W. P. Brett, 26, 1, F. Cordova sur, 282 ft from w and 281 ft from s line. Devonian Oil Co. & Barnsdall Oil Co., Tulsa, J. B. Milstead, 83½, 3, J. R. Penney sur, 551 ft n of No. 2. W. C. Woolf, Shreveport, J. B. Wilson, 70, 2, R. McAnulty sur, 890 ft from w and 330 ft from s line; 3, 250 ft from e and 280 ft from s line. R. G. McIntyre Drilling Co., Tyler, M. L. Thompson, 10, B1, F. Cordova sur, 150 ft from s and e lines. E. E. Combs, Tyler, B. Fox, 26½, 1, A. Carmack sur, 170 ft from e and 150 ft from s line. Trapshooter Reilly Oil & Royalty Co., San Antonio, M. L. Thompson, 10, 1, B 18, M. J. Pru sur, 150 ft from s and w lines. Magnolia Pet. Co., Dallas, D. Wells, 100, 2, H. Hobson sur, 150 ft from n and w lines. C. C. Still, 100, 2, M. McCabe sur, 530 ft n of No. 3; 3, 330 ft w of center of e line.

SMITH COUNTY—Jones & Snowden, Arp., M. E. Church, 6, 1, Jas. Jordan sur, 160 ft from e and 160 ft from s line. Texas Co., Shreveport, M. B. Blackwell, 100, 2, Jas. Jordan sur, 150 ft from n and e lines. R. L. Long, Waco, T. O. Wright, 9, 1, J. Vargas sur, 150 ft from n and 181 ft from e line. Deason Oil Co., Tyler, T. O. Wright, 6, 1, J. Vargas sur, 240 ft from w and 300 ft from n line.

UPSHUR COUNTY—Humble O & R Co., Houston, J. K. Edwards, 200, 1, Ferguson, D. 2360 ft from n and 289 ft from e line. Fleetborn Oil Corp., et al, Ada, Okla., J. K. Edwards, 106, 1, D. Ferguson sur, 240 ft from s and w lines. Magnolia Pet. Co., Dallas, H. Hamilton, 169, 2, D. Ferguson sur, 150 ft from n and e lines; 1, 210 ft from n and w lines.

VAN ZANDT COUNTY—Pure Oil Co., Ft. Worth, W. T. Jarman, 142, 8, N.C.S.L. sur, 325 ft from n and 250 ft from w line. Humble O&R Co., Houston, R. S. Blake, 201, 13, J. Walling sur, 150 ft from n and 2690 ft from e line.

WARD COUNTY—Sturm-Nolan Drlg. Co., Grand Falls, J. D. Jones, 80, 1, S 25, B B29, H&TC sur, 330 ft from s and e lines of sec. Rector Oil Co., Inc., Fort Worth, J. S. Smith, 160, 1, S 22, B A, GM&MB&A sur, center of ne¼. T. R. White, Royalty, A. D. Cummings, 5, 1, B 13, Grand Falls sur, 150 ft from n and w lines. Gulf Prod. Co., Fort Worth, Hutchings, 640, 8, S 3, B F, GM&MMB&A sur, 330 ft from n and 990 ft from s line sw¼.

WASHINGTON COUNTY — Sun Oil Co., Houston, Wm. Janner, 169, 6, J. F. Perry sur, 600 ft nw of No. 5.

WHARTON COUNTY — Pool & Chappell, Wharton, J. N. Lee, 640, 2, S 20, GH&H sur, 120 ft from nw and 10 ft from sw line.

WILLIAMSON COUNTY — Hays & Gee, Georgetown, F. G. Johnson, 215, 1, B. C. Low sur, 1800 ft from n and 170 ft from e line.

YOUNG COUNTY—F. H. E. Oil Co., et al, Fort Worth, J. T. Routon, 100, 1, 24, TE&L sur, 150 ft from n and e lines of sec. Stivers & Shamblin, Bristow, Okla., C. J. Taack, 40, 1, 242, TE&L sur, 450 ft from n and e lines of sw¼. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 24, 2246, TE&L sur, 750 ft from e and 766 ft from n line s½. T. F. Hunter, Wichita Falls, O. Dietrich, 44, 1, G. W. Stell sur, 150 ft from s and w lines. W. H. Hammon, Wichita Falls, S. R. Jeffery, B. 50, 2, 42, TE&L sur, 150 ft from e and 450 ft from s line. S. R. Jeffrey, B, 3, 450 ft from e and 150 ft from s line. D. M. Knox et al, Graham, A. A. Bernhardt, 100, 1, 2, 38, TE&L sur, 900 ft from n and 1050 ft from w line sec. Texas Co., Wichita Falls, J. K. Jeffery, B, 120. 6, 42, TE&L sur, 150 ft from s and w lines. J. K. Jeffery, A, 60, 4, 42, TE&L sur, 450 ft from n and w lines; 3, 150 ft from n and w lines. H. Kessler, Olney, R. A. Logan, 60, 1, 2000, TE&L sur, 150 ft from n and e lines. H. W. Lee et al, Wichita Falls, S. R. Jeffery, 15, A3, 42, TE&L sur, 450 ft from e and 150 ft from s line. Cox & Henderson, Olney, J. W. Daws, 40, 1, 1676, TE&L sur, 150 ft from s and e lines. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 23, 2246, TE&L sur, 750 ft from e and 1066 ft from s line s½. W. F. Brazleton et al, Graham, C. J. Taack, 40, 6, 263, TE&L sur, 400 ft se of No. 1, Beavans & Shaw Oil Co., Wichita Falls, Belknap, 40, 7, 22, TE&L sur, 150 ft from e and 450 ft from n line.

ZAPATA COUNTY—Trevino Oil Corp., Laredo, I. G. Trevino, 40, 9A, S 412, B 15, 150 ft from w and 15 ft from s line. Allied Gas Co. & Allen & Morris, Laredo, J. M. Gutierrez, 532, 16, No. 4 Comitas sur, 450 ft sw of No. 1. Trevino Oil Corp., Laredo, I. G. Trevino, 40, 8A, S 412, B 26, 150 ft from n and 450 ft from w line. E. C. Brogan, Hebbronville, G. T. Montemayor, 40, 2, S 64, B11, 500 ft from n and 150 ft from w line. Pray, Chamberlain, Laredo, M. Garza, 40, 3, B 1, 750 ft from nw and 450 ft from ne line.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas —casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in. —inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw—salt water; td—total depth; ur—underreaming; wo — workover; wosr — waiting on standard rig.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
KETTLEMAN HILLS—		
Superior Oil Co., Huffman 2	15,000	8320
MT. POSO—		
General Pet. Corp., Heisen 14	200	1785
LONG BEACH—		
McKeon Oil Co., No. 10	60	3705
PLAYA DEL REY—		
W. M. Crawford, No. 3	100	3820
Union Oil Co., Townsite 10	800	5870
VENTURA AVENUE—		
Associated Oil Co., McGonigle 10	300	6875
Shell Oil Co., Taylor 60	750	7197

OKLAHOMA

ATOKA COUNTY—		
Edgerton et al, Rolland 1, c nw, 9-1n-15e	*	1030
COAL COUNTY—		
Mid-Western O&G, Gum Bros., cel w½ sw nw 30-3n-10e	¶1½	1490
GRADY COUNTY—		
Margay Oil Co., Carson 1, sw nw nw 25-4n-8w	¶1½	1898
LINCOLN COUNTY—		
Magnolia, Wagoner 1, (owd) nw c ne 18-14-4e	2350	4958
MUSKOGEE COUNTY—		
Braman Oil Co., Brown 1, se ne ne 18-13-16e	¶1	1428
G. S. Wilson, Lewis 1, csl nw ne 12-15-15e	*	835
OKLAHOMA COUNTY—		
Dengail-Carolyn et al, Ransom 1, se sw nw 10-11-3w	2885	6520
OKMULGEE COUNTY—		
D. M. Logan, Pigeon 1, se c ne 31-15-13e	¶6	2005
Whitcomb et al, Harris 6, sw c ne ne 1-14-14e	10	1082
Jordan, Anderson 2, sw c ne ne 28-12-14e	¶½	560
W. L. Varner, Butler 1, nw c se se 16-12-14e	¶½	600
R. E. Burks, Howard 2, sw ne se 17-15-14e	*	1987
SEMINOLE COUNTY—		
Gwin, Earls 1, ne se nw 33-9-6e	*	4246

KANSAS

COWLEY COUNTY—		
Sooby et al, Bowman 1, ne c se 8-32-5e	¶¼	710
Blankenship Pet. Co., Solan 2, sw nw nw 28-30-3w	*	3002
McPHERSON COUNTY—		
Dickey Oil Co., and Shell, Decker 1, se c 35-19-2w	3360	2963
Gypsy Oil, Stucky 2, (owd) ne sw se 33-20-3w	695	3330
STEVENS COUNTY—		
Texas Interstate Pipe Line Co. et, al Stuart 1, c se 12-34-38w	¶6	2610

WEST VIRGINIA

RITCHIE COUNTY—		
Daniel O'Day Estate, J. B. Markey 3	25	....
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Wendt 3474	¶½	1803
MONONGALIA COUNTY—		
Pittsburg-West Virginia Gas Co., Shuman 5078	¶½	3365
MARION COUNTY—		
H. L. Tennant, Mercer Hrs. 1	¶¼	3127
CALHOUN COUNTY—		
Wiseman & Jackson, Wilson 1	¶¼	1328
BOONE COUNTY—		
Pond Ford Oil & Gas Co., Cole-Crane 10	¶1	2439

For Tabulation and Comparison See Market Section

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
TIOGA COUNTY—		
Lycoming Natural Gas Co., Hoyt 1	¶13	....
Farr 1	¶14	....
Boom 1	¶20	....
BUTLER COUNTY—		
Chas. Behning & Co., Behming 1	*	2750

NEW YORK

DUNDEE-ALTA FIELDS—		
Belmont Quadrangle Corp., Pulver 1	¶6½	....
E. Losey 1	¶4	....
C. Losey 1	¶4	....
Beyea 1	¶4	....
Gardner 1	¶4½	....
Spraul 1	¶5	....
Glenn 1	¶5	....
Kelley 1	¶4¼	....
Travis 1	¶4½	....
Waddell 1	¶7	....
Galek 1	¶4	....
Mulloy 1	¶4	....
Beming 1	¶2	....
Littel 1	¶6	....
WAYNE FIELD—		
Wittmer Oil & Gas Co., Olzewieski 1	¶12½	....
Lakes Oil & Gas Co., Unknown 1	¶3	....
Crescent Producers Co., Turner 1	¶4½	....
Houck 1	¶7	....
Olean Finger Co., Earnest 1	¶3	....
E. J. DeGolier, Weiss 1	¶10	....
Lamoka Power Co., Bigelow 1	¶10	....
Stone Oil & Gas Co., Gorden 1	¶2	....

SOUTHEASTERN OHIO

WASHINGTON COUNTY—			
Rex Oil & Gas Co., Wiliamson 1	¶½-15	1468
NOBLE COUNTY—			
Henderson Oil Co., Wells 1	¶¼	1930
Local Oil Co., Dimmerling 5	*	740

CENTRAL OHIO

MEDINA COUNTY—			
Curtis & Eakins, Brown Jr. 4	30	405
Edson Sons Co., Frank 19	40	467
Hemmer & Co., Geisinger 7	5	437
LORAIN COUNTY—			
McMillan & Co., Allen 3	¶½	2703
Ohio Fuel Gas Co., A. D. Crocker 1	¶¼	700
Lehman 2	¶1	....
BELMONT COUNTY—			
W. C. McBride, Inc., Howell-Deme 5	¶¼	1500
Gibson, Bradfield & Co., Latterson Estate 1	¶¼	1694
STARK COUNTY—			
Brendall & Co., Haymaker 1	¶2½	4414
Wittmer Pro., Trustee, Brugger 1	¶1½	3984
ATHENS COUNTY—			
Ohio Fuel Gas Co., Coplinger 1	¶1	1131
Rose-Yoeman, Winner 17	*	1090
WAYNE COUNTY—			
Harmon & George, Bates 2	¶¼	....
RICHLAND COUNTY—			
Harmon & George, Abey & Co. 1	¶½	....
COSHOCTON COUNTY—			
The Preston Oil Co., Wilt 1	*	3141
SUMMITT COUNTY—			
Smith & Co., Layman 1	¶2¼	4019
MEIGS COUNTY—			
Ohio Fuel Gas Co., Whaley 2	¶1¼	935
FAIRFIELD COUNTY—			
Patton & Bishop, Shaw 1	¶¼	793
HOCKING COUNTY—			
Ohio Fuel Gas Co., Huffman 1	*	2612
MUSKINGUM COUNTY—			
The Atha Co., Doty 1	¶½	3977

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
HENRY COUNTY—		
Lake Shore & Southwestern Metals Co., McLain 1	¶2	....

INDIANA

SPENCER COUNTY—			
Santa Fe Oil Co., Berg 3	50	597
PIKE COUNTY—			
Cato Oil & Gas Corp., Crow 1	*	1110
SULLIVAN COUNTY—			
Connelly & Co., Walters 1	*	725
DAVIESS COUNTY—			
C. C. Taliaferro, Jr., Jones 1	*	1150

KENTUCKY

HART COUNTY—			
Clarence Bundy & Co., Bradley 3	350	....
Unknown Parties, Malone 1	¶2½	....
DAVIES COUNTY—			
E. L. Newton & Co., Wells 1	*	....
Wells 2	*	....

MICHIGAN

MIDLAND COUNTY—		
Theodore Oil Co., Durkin 1	*	3594
ISABELLA COUNTY—		
Michigan Oil & Gas Corp., Parker 1	*	....

NORTH LOUISIANA

DE SOTO PARISH—		
Deupree-Fountain, J. M. Nabors 1, 5-12-11	*	2425
UNION PARISH—		
Nemours Corp., McGough 1, 24-22-3e	¶3¼	2185

MISSISSIPPI

HINDS COUNTY (Jackson Dist.)—		
Industrial Gas & Elec. Co., Ilinois Central 1, 4-5-1e	¶25	2368

LOUISIANA GULF COAST

ST. TAMMANY PARISH—		
Washington & St. Tammany Drlg. Co., Coussack 2	*	2031

TEXAS GULF COAST

PIERCE JUNCTION—			
Anderson & Plummer, Whitehead 4	10	4500
Rio Bravo Oil Co., GH&SA 102	600	4800
SARATOGA—			
Rio Bravo Oil Co., Cotton 116-A	80	490

SOUTH TEXAS

BEXAR COUNTY—			
Camp & Humble's Chavez 1	*	2633
DUVAL COUNTY—			
Mag Pet. Co.'s Benavides 1	¶30	2465
REFUGIO COUNTY—			
Moody-Seagraves O'Conner 8	1450	6448
United Prod. Co.'s Powers 6	200	6458
WILLIAMSON COUNTY—			
Ertel et al's Abbott 11	950	1932
Abbott 10	35	1947
ZAPATA COUNTY—			
O. W. Killam's Bustamante 8	50	1253
Allied O&G Co. & Allen and Morris Gutierrez 15	150	1485
Trevino Oil Co.'s Trevino 9	50	1231

WEST TEXAS

UPTON COUNTY—			
Gulf Prod. Co., McElroy 94	300	3043
WARD COUNTY—			
The California Co. Atlantic Oil Prod. Co., Gordon 1	58	2599
Gulf Prod. Co., Hutchings 7	300	2650
Magnolia Pet. Co., Sealy-Atlantic 1	*	3175

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
The Texas Co., Bednorz 1	¶17	2700

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Fain-McGaha Oil Corp., Ikard 1	*	1981
FOARD COUNTY—		
The Texas Co., Johnson 1	*	4005
WICHITA COUNTY—		
Mid-Continent Holding Co., Burnsides 9	55	1152
WILBARGER COUNTY—		
Geo. W. Shanor et al, Waggoner 1	*	1935
NORTH YOUNG COUNTY—		
Cox & Henderson Oil Co., Daws 1	*	800
F-H-E Oil Co., Routan 1	*	801
King Royalty Co.-Phillips Pet. Co., Larrimore 15	115	725
Larrimore 17	150	708
Larrimore 19	220	712
Larrimore 20	150	718
Larrimore 21	170	710
Larrimore 22	180	720
Larrimore 23	225	720
Larrimore 24	130	723
Jas. E. McKanna-The Texas Co., Jeffery 3-A	300	737
Jeffery 6-B	175	558
Wm. Moore et al, Alsup 1	*	1200
E. C. Reed et al, Tatum 2	80	659
Tatum 3	60	671
SOUTH YOUNG COUNTY—		
Dewey Knox et al, Burkett-Bradshaw 1	80	2730

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ANDERSON COUNTY—		
Humble O&R Co., Todd 6-A	35	3673
JOINER FIELD—		
Arkansas Fuel Oil Co., Wheelis 1	4000	3660
Babcock Bros.-Ann Gordon Oil Co., Camp 2	150	3610
Big Indian Oil Co., Holland 1	*	4015
Blackwell O&G Co., W. P. Moore 1	8000	3663
Danciger O&R Co., Deason 1	1500	3661
Devonian Oil Co.-Barnsdall Oil Co., Milstead 1	3000	3678
Deep Rock Oil Co.-Frank Foster et al, M. Alford 3	600	3691
Droppleman-Cloud et al, Hoffman-Stone 1	10,000	3735
Fox-Butler & Heflin, Thrash 3	400	3698
Gilcrease Oil Co., Bradford 4	3000	3665
Green Pine Oil Co., Thrash 1	1200	3644
Gulf Prod. Co., W. Shaw 1	6000	3732
E. E. Thrash 3	1200	3725
W. B. Hamilton et al, Gambrell 1	7000	3711
Haynes Drilling Co., E. E. Thrash 1	8000	3774
Humble O&R Co., Kangerga 6	3000	3720
M. L. Thompson 2	6000	3712
H. L. Hunt et al, W. R. Fair 2	6000	3673
Plowman 1	4500	3843
M. Poole 1	4800	3790
Indian States Oil Co., Toliver 2	5000	3710
John Mabee, Inc. & Hobson, Wilson 1	9600	3662
Magnolia Pet. Co., J. R. Wright 1	13,000	3701
Geo. L. Pace et al, A. F. Deason 1	4500	3704
Pilot Oil Co., M. A. Thrash 1	7500	3794
Jim Polard (was Nat' Drg. Co.) Young 2	4000	3716
W. G. Ray Drlg. Co.-W. C. Woolf, J. P. Wilson 1-A	4000	3657
Roeser-Pendleton, Inc., Glenn Pool 2	3500	3730
Melisa Pool 2	4600	3745
Sinclair O&G Co., A. S. Jarvis 1-B	4500	3663
Turman Oil Co., Dark 1	2500	3712
Young 3	1500	3705
Paul Vitek et al, Jobe-Dunklin 1	7500	3675
C. L. Witherspoon Oil Co., T. O. Wright 1	7200	3696
Cranfill-Reynolds Co., Susie Scott 1	12,000	3586
Geo. Thompson 2	12,000	3659
Mills Bennett (was Gulf Coast Oil Co.), J. H. Palmer-Brightwell 2	12,000	3659
J. H. Palmer-Brightwell 4	11,000	3727
Devonian Oil Co.-Gulf Prod. Co., Motley 2	9600	3665
Elzey Drilling Co., Brightwell 1	7000	3659
Gulf Prod. Co., Birdsong 3	8000	3582
Mary Charles 1	6000	3610
L. Della Crim 1	10,000	3638
Muckelroy 1	11,000	3570
A. Speer 3	9600	3618
Heep Oil Corp.-Houston Oil Co., A. Givens 1	8000	3635
Humble O&R Co., S. S. Laird 5-A	3000	3724
S. S. Laird 3-B	3500	3666
Nat Hunter Oil Prod. Co., E. L. Bunytn 3	7000	3717
Magnolia Pet. Co., J. C. Bradberry 1	13,000	3697
J. C. Bradberry 2	9000	3608
M. B. Hughey 1	13,000	3506
Mazda Oil Corp., Hazler 1	15,000	3641
Merren-Mays et al, W. Hawkins 1	10,000	3664
Merrick Drlg. Co. et al, Brightwell 1	7500	3658
Navarro Oil Co., Brightwell 3	6000	3620
John W. Olvey & Sample, L. D. Crim 4	8000	3737
Geo. L. Pace et al, C. Harrell 1	*	3875
Republic Prod. Co. E. C. Christian 1	9600	3632
B. F. Hindman 1	12,000	3629
Republic & Louis Hart, Bean 1	7500	3632
Haynes 2	12,000	3661
R. S. Rushing et al, J. M. Dickson 1	10,000	3590
H. R. Smith-Houston Oil Co., Bean 1-A	5000	3632
Snowden & McSweeney Co., F. Bean 2	3000	3679
A. Laird 3	7500	3584
Stanolind O&G Co., Brightwell-Morse 1	8000	3611
Stephens-Crowley-G. W. Hindman & S. G. Ward, Blackburn 1	15,000	3610
Sun Oil Co., J. R. Beall 2	6000	3590
Texas Pacific Coal & Oil Co., C. O. Christian 1	7200	3750
Turman Oil Co., Brightwell 3-B	6000	3641
Paul Vitek et al, Louis Osborne 1	*	4005
Weaver-Crim Corp., Laird 2-B	6500	3610
J. Z. Werby & McMinn, S. King 2	7500	3612
LONGVIEW FIELD—		
Arkansas Fuel Oil Co., R. S. McKinley 2-A	12,000	3612
Barnsdall Oil Co.-Houston Oil Co., McGrede 2	9600	3614
R. Bowles et al, J. C. McKinley 1	9600	3646
Columbia O&G Co., A. Christian 1	10,000	3587
Earl P. Corley-Blair et al, Bumpas 1	14,000	3580
Cranfill-Reynolds Co., S. S. Barton 1	7500	3718
Fleetborn Oil Co., J. K. Edwards 1	10,000	3616
Gulf Prod. Co., F. C. Fishburn 1	11,000	3571
Shepperd 1	6000	3554
Humble O&R Co., A. Carter 1	10,000	3533
Karona Oil Co. (Heyser & Heard) Guy Heineman 1	15,000	3647
Magnolia Pet. Co., J. C. McKinley 2	12,000	3644
O'Brien & Rex Drilling Co., Mahaney 1	12,000	3632
Shasta Oil Co., A. Fenton 1	8000	3628
Pilot Oil Co., Magrill 1	10,000	3678
Sinclair O&G Co., M. Moncrief 1	6000	3578
M. Moncrief 2	9600	3564
M. Moncrief 3	7000	3558
Smitherman & Greer, Geo. Jones 1	7500	3575
Stanolind O&G Co.-Simms Oil Co., Magrill 1	7000	3677
Yount-Lee Oil Co., Geo. Fenton 1-A	12,000	3610
Geo. Fenton 1-B	9600	3603
VAN FIELD—		
Pure Oil Co., R. C. Crim (57-ac) 3	350	2979
A. D. Clark (3-ac) 2	8000	2940
B. W. Russell 1	3000	2977
R. L. Wells (51½-ac) 1	9000	2929

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ANDERSON COUNTY—H. B. McConnell et al's Walston 1, M. Main sur, dk. Rianjo Pet. Co.'s Lynn 1, sp and sd.

BOWIE COUNTY—Mayfield Oil Royalties & Devore's R. B. Cooper 1, W. M. Ward sur, elev 360 ft, sd 1955 ft. W. A. Swift-G. W. Hindman & Tom Bell's Roy Merritt 1, Y. S. McKinney sur, sd 2525 ft. Lee J. Tomberlake et al's J. M. Tidwell 2, L. M. Rice sur, elev 290 ft, sd 3000 ft.

CAMP COUNTY—W. E. Duke et al's L. B. McCaslin 1, Mary Hays sur, dk.

CASS COUNTY—R. G. Baker et al's W. R. Kaver 1, John Lick sur, dr 2265 ft. Everets Drlg. Co.'s H. W. Bullington 1, H. E. Callahan sur, dr 275 ft. Geo. B. McCamey et al's R. E. Hall 1, H. Buckler sur, top Pecan chalk 2387 ft, sd 2560 ft. C. E. Murdock et al's Coody-Bank 1, E. Watson sur, elev 401 ft, Pecan chalk 2522-2953 ft, top Austin chalk 3490 ft, sd 3990 ft. Nelson et al's Irvin 1, M. Harris sur, lcn. Olds-Smith et al's Poe Anthony 1, J. C. Byers sur, dr 2515 ft. Pigg & Davis (Fraley & Nicholson's) Ray Bryan (88-ac) 1, A. H. Latimer sur, sd 1970 ft.

CHEROKEE COUNTY—Ben Banner et al's A. S. Lacy 1, J. L. Hogg sur, dr 3465 ft. D. H. Byrd et al's Fariss 1, elev 215 ft, sd 4105 ft. Helen Claire Oil Co.'s M. B. Perkins 1, Thos. Sanford sur, rig. H. M. Jones et al's McLee 1, Jas. Knight sur, Pecan chalk 3138-3450 ft, sd 3477 ft. Rowan-Nichols Oil Co.-Tidal Oil Co.'s W. T. Norman 1, Irby Large sur, dr 1650 ft. Shell Pet. Corp.'s Southern Pine 1, G. McGregor sur, lcn. W. A. Stone et al's E. M. Decker 1, Geo. Ruddle League, Pecan chalk 4342 to 4640 ft, dr 4785 ft. Walton Oil Co.'s E. Singleton 1, Tillman Waters sur, sd 2960 ft.

DELTA COUNTY — The Delta Co.'s M. Neatherly 2, J. B. Arnold sur, sd 3145 ft. D. S. Hoad et al's J. J. Baker 1, B. Carson sur, elev 437 ft, sd 1555 ft.

FRANKLIN COUNTY — Harper-Byers Oil Co.'s A. J. Laws 1, D. G. Rogers sur, co 3055 ft. L. B. Pruitt & Geo. L. Pace et al's C. E. Cowan 1, Sam Lipscomb sur, dr 1265 ft.

FREESTONE COUNTY — J. P. Haley & Young's M. C. Lancaster 1, D. Avant sur, dk. E. L. Smith Oil Co.'s E. Jackson 1, Wiley Carter sur, dr 2710 ft.

HENDERSON COUNTY—Arcadia Ref. Co.-Shell Pet. Corp.'s Dean 1, Simon Boon sur, Pecan chalk 2432-2524 then to 2650 ft, top Austin chalk 3330 ft, dr 3530 ft. Westhyde Investment Co.'s Thornhill 1, Jas. Spivey sur, rig.

LAMAR COUNTY—Everett & Allen's J. A. Guest 1, Luke Roberts sur, elev 525 ft, top Pecan chalk 2072 ft, sd 2700 ft. Puritan Oil Co.'s Geo. Parr 1, R. Russell sur, rig.

LEON COUNTY—Sun Oil Co.'s Ella Grayson 2, Marquette blk, dr 210 ft.

MORRIS COUNTY — Verne Dumas Pet. Co.'s Thos. Ball 1. A. S. Young sur, rig.

RAINS COUNTY—Berry-Hale et al's Owenby 1, J. Alexander sur, sd 2095 ft.

RED RIVER COUNTY—Concord Oil Co.'s Norris-Guest (35-ac) 2, lcn. C. M. Joiner-M. Harris-Echols & Peters' E. Howison 1, W. Humphries sur, elev 540 ft, sd 1960 ft. Everett & Allen (S. A. Ross et al's) W. F. Bryan 1, P. Vaughn sur, dk. Pierson et al (Concord Oil Co.'s) J. R. Dillahunty 1, I. Moore sur, sd 430 ft.

RUSK COUNTY—Adams & Williams' Stephens 1, M. Sanches sur, dk. A. J. Brown et al's Strong 1, John Hallan sur, dk. Caprock O&G Co. (was R. C. Viehl et al's) Burton 1, J. J. Ybarbo sur, rig. R. W. Giles-Frank Melat et al's Newt Orr 1, Wm. Tippett sur, top Pecan chalk 1980 ft, dr 2465 ft. Albert W. Jones Oil Co.'s J. Menefee 1, T. G. Walling sur, sp and sd. J. S. Kimbrough et al's Weatherly 1, Robt. Martin sur, Pecan chalk 2784-3240 ft, fsh 3315 ft. E. C. Laster, Inc., & Miller's B. B. Gray 1, Jas. McLean sur, dr 1210 ft. Leonard Pet. Co.'s Sanger-Tablowski 1, J. P. Meredith sur, dr 2340 ft. Pitts et al's Freeman 1, J. Watkins sur, dk. Nat Sadler et al's Ed. Sparks 1, Abner Nail sur, trace gas and salt water 1257 ft, dr 1510 ft. Sinclair O&G Co.'s March 1, L. Williams sur, dr 2515 ft. Westexas Oil & Roy. Corp.'s E. C. King 1, J. C. Morrison sur, Pecan chalk 2650-3100 ft, dr 3555 ft.

SMITH COUNTY—Arkansas Drlg. Co.'s L. A. Wallace 1, W. W. Avery sur, set sur cas 143 ft. Big Indian Oil Co.'s Wolford 1, top Pecan chalk 2690 ft, dr 3090 ft. J. A. Brown et al's T. V. Wright 1, sp and sd. C. B. Bunte, Inc.'s, J. Adkisson 1, dk. Central Oil & Gas Co.'s T. O. Wright 1, dk. E. L. Chapman et al's Alexander 1, dry and abn acct salt water in Woodbine sand 4085-4144 ft. Concord Oil Co.'s Wolford 1, dr 3350 ft. C. P. Oil Co.'s Wright 1, rig. Cotton Belt Oil Co.'s Moore-Jackson 1, dk. R. H. Dearing & Sons' Wright 1, rig. Deason Oil Co.'s Wright 1, rig. Verne Dumas Pet. Co.'s Cook 1, rig. East Texas Dev. Co.'s Negro Church 1, lcn. Bailey Gaunce et al's Cook 1, Jas. Jordan sur, sd 2550 ft. Imperator Oil Corp.'s I. M. Green 1, T. Hogan sur, sd 2210 ft. C. M. Joiner et al's W. M. Wright 1, E. Van Sickle sur, top Pecan chalk 3756 ft, dr shale 3945 ft. Magnolia Pet. Co.'s Ray Loosier 1, top Pecan chalk 2690 ft, top Austin chalk 3510 ft, oil sand 3668-72 ft. Macmillan Pet. Corp.'s Wright 1, dk. Miller et al's McDavid 1, rig. C. R. Morrison et al's I. Roy 1, H. C. Cook sur, top Pecan chalk 2880 ft, sd 3340 ft. Owen-Sloan Oil Co.'s M. Starnes 2, Sam Epps sur, elev 357 ft, Pecan chalk 2620-2973 ft, Austin chalk 3687-3715 ft, top Woodbine 3805 ft, coring 3857 ft. A. W. Phillips et al,'s Morrison 1, Wm. Harrison sur, dk. M. M. Rowan et al's Gibbons 1, J. M. Garcia sur, co 1540 ft. Sinclair O&G Co.'s Mayfield 1, dk; G. Patterson 1, Pecan chalk 2705-3050 ft, testing oil sand 3669-71 ft; R. G. Wright 1, testing oil sand 3697-3706 ft. Sun Oil Co.'s A. V. Ritch 1, Pecan chalk 2708-3058 ft, top Austin chalk 3512 ft, testing oil sand 3663-65 ft; Denton 1, testing oil sand 3695-3700 ft; Henson 1, dr 3616 ft. Valentine Smith et al's Wm. Stone 1, D. Shaw sur, dr 2410 ft. The Texas Co.'s Blackwell 2, rig.

TITUS COUNTY—Cook et al's Rogers 1, Moore sur, sp and sd. C. M. Joiner Pet. Co.'s C. D. Browne 1, Bard Evans sur, sp and sd.

UPSHUR COUNTY—Arcadia Ref. Co. & Harper's Johnson 1, J. H. Mallory sur, Pecan chalk 2461-2971 ft, dr 3230 ft. Bremen & Woods' Robertson 1, J. Stephenson sur, elev 390 ft, Pecan chalk 2640-3003 ft, top Austin chalk 2599 ft fsh core bbl, 3661 ft. Joe Burnham et al's L. Beck 1, H. W. Augustine sur, rig. Cockrell et al's C. L. Lee 1, W. L. Palmer sur, rig. W. R. Daniels et al's A. Callahan 1, E. A. J. Evans sur, dk. Verne Dumas Pet. Co.'s A. C. Phillips 1, S. Harrell sur, dk. Home Oil Co.'s F. D. Futtchell 1, A. Lumbrera sur, dr 810 ft. Humble O&R Co.'s Edwards 1, D. Ferguson sur, top Pecan chalk 2528 ft, dr 2610 ft; A. O. Phillips 1 and 2, S. Harrell sur, dks. Magnolia Pet. Co.'s H. Hampton 1, D. Ferguson sur, dr 1210 ft; Hampton 2, dk. Maudeville & Thompson's Webb 1, dk. McMahon et al's Hamilton 1, M. Chandler sur, dk. McPhail-Smith & E. B. Perkins' Kay 1, T. G. Elliott sur, top Pecan chalk 2601 ft, dr 2920 ft. W. H. Peckham et al's J. W. Free 1, G. W. Hooper sur, lcn. Mudge Oil Co.'s Free 1, dk. Mrs. J. Richardson et al's O'Bryne 1, Wm. Bratton sur, dk. Sorrells & Duffey (was J. W. Greene's) Wooden 1, I. Williams sur, sp and sd. A. C. Trammell et al's M. A. Vickery 1, E. A. J. Evans sur, dr 1350 ft. R. M. Weaver Jr. & Young Bros. & Alexander's L. J. Everett 1, W. Goodwin sur, dr 160 ft. Union Drlg. Co. et al's W. M. Phillips 1, H. Edwards sur, rig.

VAN ZANDT COUNTY—L. R. Barton et al's C. L. Hubbard-Nixon 1, M. J. Cadena sur, sp and sd. Clifford Oil Co.'s H. F. Haake 1, John Hawks sur, dr 810 ft. C. M. Joiner Pet. Co.'s T. B. Meeks-Randall 1, A. L. Dutcher sur, top Pecan chalk 2380 ft, dr 2510 ft. Texas Chief Oil & Royalty Corp.'s Foster 1-A, F. Montgomery sur, dr 2780 ft.

VAN FIELD—Humble O&R Co.'s R. S. Blake 12, rig. Pure Oil Co.'s W. T. Jarman 8, cem cas 2872 ft; J. R. Shivers (46-ac) 3, dk; L. A. Smith (40-ac) 3, testing 2938 ft; H. P. Tunnell (131½-ac) 2, dk; Ella York (109-ac) 7, cem cas 2942 ft. Shell Pet. Corp.'s E. L. Fowler 10, dk.

WOOD COUNTY—Deep Rock Oil Co.'s M. Smith 1, Pecan chalk 2785-2895 ft, dr 3900 ft. Main Holding Co.'s Stewart 1, E. Rehorse sur, dk. Paul Vitek & Penn's Rosa Vogel 1, Sarah English sur, sp and sd. Walmar Oil Co.'s J. Ivey 1, A. Hamilton sur, dk. Wood County Dev. Co.'s M. M. Rick 1, D. Fuller sur, sd 1950 ft.

SOUTH TEXAS

ATASCOSA COUNTY—Glen Mathis et al's Mrs. Geo. M. Martin 1, 3 mi s Amphion, 7 mi sw Poteet, dr 600 ft.

BASTROP COUNTY — Texas Pet. Co.'s (Schimmel and Batts) Williams 2, 2½ mi sw Yost pool, lcn. Smith and Burns' Marburger 1, King and Millett sur, dk.

BEE COUNTY—Grebin and Woods' Riggs 1, 6½ mi w Skidmore, 2 mi from Live Oak County line, James Nowland sur, lay gas line. Alexander et al's McFall 1, 3 mi s Skidmore, sd 1205 ft. Davis et al's Geo. Ray 1, 1 mi sw Pettus townsite, dr 2215 ft. J. S. Mauldin's Mauldin 1, G. A. Kerr sur, just s of Pettus townsite, coring 3852 ft, showing gas. United Prod. Co.'s Ray 37, Willis A. Moore sur, one mile e Ray-McKinney pool, dr 2705 ft.

BEXAR COUNTY—Penn Oil Co.'s Pollok 1, in Cooksey unitized pool, Rialls sur, 15 mi e San Antonio, casing set 1378 ft, completing. Camp and Humble O&R Co.'s Chavez 1, w Elmendorf, 12 mi se San Antonio, sd 2573 ft in Georgetown, acct heavy rains. Russell & Moore's A. O. Mills 3, A. Navarro sur, 10 mi se San Antonio on Somerset road, sd 938 ft. J. Morgan Russell's Price-Story 1, A. Navarro sur, 10 mi s San Antonio on Somerset road, sd 1175 ft. Weilbacher & Brock's Ernest 1, J. Christopher sur, 2 mi n Somerset, sd 925 ft.

BLANCO COUNTY—Hardy Sitton's Standeford 1 (formerly Adams and Lyles) James Standeford sur No. 155, 3½ mi ne Blanco City,

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

to re-dr at 970 ft; McMillen 1, Benjamin Williams sur No. 125, 2 mi w Blanco City, sd 786 ft, prep to re-dr.

BROOKS COUNTY—The Texas Company's Allen Land and Cattle Co. 1, 7110-acre San Antonita grant, dr 2000 ft. Howeth et al's Singer 1, sur 436, 400 ft e Humble Singer 1, had oil show 851-57 ft.

CALDWELL COUNTY — Mills and Chapman's McMahon 1, 6 mi se Lockhart, Pinchback sur, dr 2430 ft. Rayor's Dunlop 1, near Luling, dk. Ralph Ogden et al's O. S. Alexander 1, 10 mi se Lockhart, near Foster Reiter's Alexander 1, swabbing little oil and sulphur water, casing set top Edwards 2330 ft, total depth 2338 ft.

COMAL COUNTY—Caldwell and Lanier's T. J. Byler 1, H. E. & W. T. sur, No. S-894, 10 mi s Blanco City, set 600 ft 10-in cas.

DUVAL COUNTY—Humble Oil & Refining Co.'s Kohler 50, sur 164, Kohler pool, dr below 6130 ft. O'Byrne et al's Weil Bros. 1, B. S. & F. sur No. 568, 7 mi sw S & O pool, sd to repair boiler, td 1720 ft. S. J. Carpenter (Gus Pape) Juan Benavides 1, blk 38, sub of Carpenter sub, Mesquite grant, sand 1665-69 ft, show some oil, 6⅝-in cas set 1665 ft, wait on cement. Magnolia Pet. Co.'s W. Benavides 1, sur 172, Cole field, completed for 30,000,000 cubic ft of dry gas at 2455-65 ft. Coffee et al's Jose Garza 1, center of sur 49, Garza Irrigation Company, sd 900 ft.

GOLIAD COUNTY—V. F. Neuhaus et al's Pettus 1 (originally drilled by the Southern Crude Oil Purchasing Co), total depth 3852 ft, prep to dr deeper.

GUADALUPE COUNTY — Harry Bruner's Jim Sherrill 1, Geo. Allen league, near Staples, fsh 678 ft. Walton Zobrowoski 1, ¼ mi n of Adams & Lyles Zobrowoski well, dr 760 ft. C. McGarity et al's August Wesch 1, H. M. Thompson sur No. 89, nw part of county, 2 mi n Marion, top of Edwards cored at 540 ft, now sd 800 ft to move on larger rig for deep test.

JIM HOGG COUNTY—DeWitt-C. DeWitt's Teofilo-Gomez 1, sur 12, sd 200 ft. Magnolia Pet. Co.'s Y. V. Cuellar 1, blk 92, W. A. Dannelly sub, sur 575, share 2, El Peyote grant, dr 4290 ft. P. & M. Oil Co.'s (Peterman and Minahan) Palacios 1, 2 mi s and 10 degrees e Randado field, blk 14, sur 231, sd 1360 ft.

JIM WELLS COUNTY—Carsil O&G Co.'s McGill 3, 900 ft due s No. 1 Gasser, Wm. D. Baldwin sur, 3 mi n Armagosa, lcn.

KERR COUNTY—Herbert Oil Co.'s J. D. Witt 1, W. H. Hamilton sur, sec 1923, Camp Verde district, dr 200 ft. Col. B. M. Hatridge's W. R. Rischworth 1 (Neely Halbert) sec 1459, 2 mi se Center Point, sd 117 ft; Duderstadt 1, Reservation-Harper area, dk. Evans and Sprinkle's Jeff Love 2, sw cor sec 1593, ½ mi se discovery, to sp. Evans and Gant's Seiker and Mears 1, sw cor sec 1605, CCSD&RGNR Ry sur, 2 mi ne Love test, dr below 2000 ft. Chester A. Martin's (Mims et al) J. E. Young 1, nw cor sec 28, n and e of Love well, to sp.

KLEBERG COUNTY—Barbee and Hunter's Finnegan 1, nw cor John D. Finnegan tract, 7 mi s Kingsville, set 450 ft surface pipe.

LA SALLE COUNTY—Fred W. Volz's Coleman 1, blk 15, sur 514, set 40 ft 10-in cas.

LIVE OAK COUNTY — Burke-Greis Oil Co.'s Geo. West 1, 10 mi w Geo. West townsite, about center of James Vaughan sur No. 57, dr 2537 ft. Houston Oil Co.'s Cartwright 23, Mt. Lucas field, Sandman sur, east of No. 11 Cartwright, dr 2160 ft. Coquat et al's H. Hewitt 1, Thomas Adams sur, set 54 ft of 10-in cas.

McMULLEN COUNTY—Camp and Stanolind O&G Co.'s Murphy 1, 1½ mi ne Massey well, dr 550 ft.

MEDINA COUNTY—F. E. Tegler's J. P. Nixon 6-A, blk 2, sur No. 14, Ina field, dr 625 ft.

NUECES COUNTY—Gulf Coast Oil Co.'s Harrell 1, ¾ mi n field, GC&SF sur, sec 311, blk 32, blew in wild May 30, caught fire, controlled and shut in, casing set 4087 ft, sand 4095 ft. L. L. Smith, Inc.'s Hunter 1, ½ mi e of field, Rincon Del Osa grant, dr 4293 ft in shale. Saxet Oil Co.'s Dunn 8, 1000 ft e of Dunn 7, cas set 4275 ft, sand 4277 ft, being completed. Houston Oil Co.'s Harrell 2, sw cor of John Dunn sur No. 312, 2 mi nw of main producing area, blew in wild May 19 from sand 2725-40 ft, still running wild, showing little oil and slight bit of sw; Morgan 2, originally completed as producer at 4095 ft, now drilling deeper, cored sw sand 4597 ft.

REAL COUNTY—Gant and Kilgore & Eastland Oil Co.'s Dan Auld 1, sec 23, CCSD & RGNR Ry sur, 3 mi sw Love well, dr 3670 ft. Evans and Sprinkle's Haby 1, sec 175, AB&M sur, 7 mi sw field, dr 2300 ft.

REFUGIO COUNTY—Humble O&R Co.'s D. M. Conner 1, mov on.

SAN PATRICIO COUNTY—Saxet Oil Co.'s White Point Dev. Co. 4, White Point field, dr 5712 ft.

STARR COUNTY—B. B. Tips' Frank Doyono 1, tract 4, Porcion 81, sd 332 ft. Sacramento Oil & Gas Co.'s Seabury et al 1, sd 411 ft. Los Olmos Oil Co.'s Kelsey Bass 4, Porcion 75-76-77, Jurisdiction of Carmargo, sand 407-21 ft, show oil, casing set 407 ft, wait on cement.

VICTORIA COUNTY—Houston Oil Co.'s Konrad 1, Beck Salt Dome, n Victoria, T&NO sur, dr about 300 ft. Simpson-Fell Oil Co. & Westheimer et al's Levi 1, 10 mi s Victoria, 9 mi ne field, test sw 3852 ft, now dr 4070 ft. T. B. Slick Estate's McFadden 1, J. Barian sur, sand 3502-12 ft, casing set 3502 ft, showed 650 pounds pressure on ⅜-in choke in 3 min, dr out plugs. United Prod. Co.'s McFadden 4-A, s part of county, 3000 ft e discovery well, set 1060 ft surface cas, wait on cement.

WEBB COUNTY—Cole Pet. Co.'s (Carson) Benavides 2 (4), sur 1601, dr 2110 ft. Engene Garner, Jr.'s Billings, nw ¼ of ne ¼ of sur 71, lcn.

ZAPATA COUNTY—Benson Oil Co.'s S. Vela 1, blk 12, sur 259, dr 2410 ft. E. C. Brogan's Montemayor 2, blk 11, sur 64, dk. Bill Henry's Gopher Trust Estate 1, sub of share 8, Borrego grant, blk 10, sur 4, re-dr 1400 ft. O. W. Killam's Bustamante 8, blk 7, share 5, Fransler partition, completed 50 bbls 1246-53 ft; Bustamante 9, share 5, Fansler partition, lcn. National Oil Co. of Texas' Luther et al 1, blk 97, D. Pron sub, Porcion 6, sd 596 ft. Penny Prod. Co.'s Cuellar 1, Pappas sub, sur 2, blk 11, dr about 2100 ft. Talmadge and Mackenzie's Trevino 1, blk 6, share 4, Marts and Beavens sub, Porcion 2 and 3, sd 519 ft. T. H. Ward's Uribe 1, Share 7, blk 8, Partition 6, prep to sp. Allied O&G Co. & Allen and Morris' Gutierrez 15, share 4, Fansler Partition, completed 150 bbls, total depth 1485 ft, top of sand 1478 ft. Trevino Oil Co.'s Trevino 9, sur 412, completed 50 bbls 1231 ft. Pal Mar Oil Co.'s Bustamante 1, share 5, Fansler Partition, lcn.

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EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
Rowan & Nichols, Bussey 1, E. A. Merchant sur	*	3564
PANOLA COUNTY—		
Texas Co., Brumble 12, Jno Womack sur	¶2	4751

HARRISON COUNTY — Hunter et al's Daugherty 2, W. B. Burris sur, 12½ cas 245 ft, ta in Georgetown 3563 ft. O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, elev 200 ft, 12½ cas 215 ft, top SC 1624 ft, sd repr rig 1830 ft. Rowan & Nichols' Bussey 1, E. A. Merchant sur, top Nacatosh 1995 ft, top PG 2310 ft, dry abn in Georgetown, td 3564 ft. Crump & Hannagan's Dunn 1, Bettie Humphries sur, elev 330 ft, ta 4006 ft. Siegel Bros. et al's T. J. Taylor 1, F. O'Neal sur, lcn. Banner et al's Lowrey 1, W. O. Stanfield sur, top Nacatosh 1700 ft, top PG 2136 ft, cored Blossom sand showing oil 2797-2805 ft, 6-inch 2797 ft, mo collar, td 2814 ft. Ryan Cons. Pet. Corp.'s H. H. Key 1, E. Carroll sur, sp cemtd 12½ cas 484 ft (Trinity test planned). Everts Drilling Co.'s Sypert 1, Richard Hooper sur, no Nacatosh, top PG 2154 ft, sd 2675 ft. J. M. Gholson's Bivins 1, T. K. Pearson sur, rig. Olford et al's Bolding 1, W. O. Stanfield sur, base Nacatosh 1820 ft, sd in sandy shale 2020 ft. Thomas & Kinsey's J. R. Watson 1, Thos. Iden sur, dk.

MARION COUNTY—Rondeau & Hindman's McGaugherty 1, W. J. Wills sur, no report. Rondeau & Hindman's Lindsay 1, Alex Albright sur, sd 400 ft. J. W. Hamilton's Wood 1, Alex Albrought sur, sd 400 ft. Claunch et al's Laun 1, Henry Fugham sur, rig. Sheldon et al's Brown 1, R. B. Fowler sur, 12½ cas 519 ft, dr 1100 ft.

PANOLA COUNTY—Bell et al's Burnett Lbr. Co. 1, S. B. Hendrick sur, elev 186 ft, sd 3335 ft. Dillon & Bradham's Baldwin 1, Hampton West sur, 12½ cas 43 ft claim top PG 1500 ft, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Werner 10, B. C. Jordan sur, 9-inch cas cemtd 3450 ft (Trinity test). Southwestern O&G Co.'s Vinson 1, C. T. Anderson sur, dr 2850 ft. Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, 12½ cas 780 ft, top chalk 1352 ft, 8¼ cas 1900 ft, dr 3760 ft. Texas Co.'s Brumble 12, Jno. Womack sur, 10-inch 1200 ft, 6⅝ cas 4450 ft, 2 mil ft gas 400 bbls sw, td 4751 ft. Everett Prod. Co.'s McDaniel 4, Alamson Barr sur, wo 6⅝ cas claim 30 ft bro sand showing gas, td 1315 ft. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, dk. Hoffer et al's Cameron 1, W. A. La Grone sur, dk. Davidson et al's Latham 1, G. F. Penn sur, dr 400 ft. Ark. La. P. L. Co.'s Werner 14, B. C. Jordan sur, sp 12½ cas 150 ft (Trinity test). Nelson et al's Williams 1, Jas. Hanks sur, dk.

SHELBY COUNTY—Sloane Prosp. Co.'s T. B. Sandford 1, M. M. Vann sur, 12-inch cas 300 ft, top PG 2350 ft, dr hd chalk 2405 ft; Windham 1, A. H. English sur, elev 307 ft, 10-inch 180 ft, cored chalk showing oil 3334-51 ft, tried make ds test, failed get seat, cored bro chalk 3389-99 ft, ditch showed much light oil and gas, set 800 ft liner with canvass pckr and perforation, bailed with show oil and gas, wo sand pump, td 3399 ft. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3111 ft. E. L. Chapman's Pickering Lbr. Co. 1, C. F. Henry sur, 10-inch 240 ft, dr lime 3390 ft (corrected depth). Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, 12½ cas 500 ft, sd wo heavier rig, td 1880 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur, 10-inch 200 ft, dr 1610 ft. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, base PG 2292 ft, dr gummy shale 2390 ft. T. A. Martin's J. A. Bush 1, Alfred Lindsay 1, mov in rig. Joiner et al's Foster & Billingsley 1, J. Bowlin sur, mov in rig. Schultz et al's Hughes 1, J. Clay sur, 10-inch 80 ft, dr hd sandy shale 1615 ft. C. H. Tautenhahn's J. C. Bogard 1, Thos. Ba-

LOUISIANA GULF COAST

ASCENSION PARISH—Triumph Oil Co.'s Lacey 2, stdg 4220 ft.

BEAUREGARD PARISH — Beauregard G. & O. Co.'s Cochran 1, Merryville, dr 2830 ft gumbo.

CALCASIEU PARISH — Wilfred Lahay's Jardell, 2 mi ne Vinton, sd 3250 ft. Vacuum's State 7, Lockport, stdg 6567 ft sand. Yount-Lee's Miler 2, Lockport, dr 6330 ft sand. Gulf's Lutcher-Moore 27, Starks, et sc 1278 ft. Union Sulphur Co.'s Fee 765, Sulphur, dd, 4455 ft; Fee 767, set cas 1730 ft.

CAMERON PARISH—Vacuum's Cameron Meadows 2, dr 4180 ft gumbo. R. E. Seiss' Vincent 2, Hackberry, dr 1970 ft shale. Magnolia's Sweet Lake Land Co. 2, ru and rebldg dk.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 11, stdg 860 ft; Lake Peigneur 12, dr 460 ft shale.

IBERVILLE PARISH—Standard Oil Co. of La.'s Gay 1, Bayou Choctau, stdg 4300 ft; Schwing 6, Bayou Blue, dr 840 ft gumbo; Schwing 7, lcn; Wilbert 7, set cas 60 ft; Wilbert 9, dr 3720 ft, sandy lime; Case 2, Bayou des Glaise, lcn abn.

PLAQUEMINE PARISH—Humble's Cockrell Moran 4, set cas 300 ft.

ST. TAMMANY PARISH—Washington and St. Tammany Drlg. Co.'s Coussack 2, abn 2031 ft.

TANGIPAHOE PARISH—Joan Dev. Co.'s Lake Superior Oil Co. 1, t. a. 3010 ft.

TERREBONNE PARISH—The Texas Co.'s Bay St. Elaine 1, dr 5000 ft lime; Caillou Island 6, o. s. 4480 ft; State Dog Lake 4, rm 4350 ft; Four Isle 5, dr 600 ft lime; Lake Barre 6, dr 3600 ft lime; Lake Barre 10, lcn; Lake Barre 11, lcn; Lake Barre 12, lcn; Lake Barre 13, dr 3220 ft lime; Lake Barre 14, lcn.

VERMILION PARISH — Pure's Alliance Trust Co. 1, Gueydan, dr 2750 ft sand and shale.

WEST FELICIAN PARISH — Putnam Synd.'s Como Plantation 2, prep to set cas 1530 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
DE SOTO PARISH—		
Neff et al, Ramsey 1, 33-13-16	*	3081
SABINE PARISH—		
Durham Oil Co., Polly 1, 18-8-12	*	2722
Pelican Nat. Gas Co., La. Long Leaf 9, 3-7-11	*	2671
Jno. Woodley, Sabine 1, 12-8-12	*	2716

BIENVILLE PARISH — Ark. La. P. L. Co.'s Gayoso Co. Inc., 1, nw sw 14-16-10, sp 15½ cas 112 ft, dr 1111 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, sd 2950 ft. Rambaugh et al's Allison 1, 10-19-13, sd 1100 ft. Flint River Oil Co.'s De Moss 1, se nw 22-22-13, 12½ cas 236 ft, small show oil and gas in ds test 2612-30 ft, td 2657 ft. Hankins et al's Newell 1, ne ne 12-19-11, dr 720 ft (Upper Trinity test.) H. I. Morgan's Kendricks A-13, nw se 22-19-11, gas blowout in first hole killed at 1737 ft, skid over for new hole (upper Trinity test). D. L. Perkins et al's Ardis 1, ne sw 13-15-11, rig; Glover 1, se ne 23-15-11, lcn.

CADDO PARISH—Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, 15½ cas 200 ft, 12½ cas 1129 ft, sd wo drill stem 2958 ft (5500 ft test). United Gas Pub. Serv. Co.'s Smith 1, nw ne 33-23-16, 12½ cas 471 ft, dr chalk 2227 ft (5500 ft test).

CATAHOULA PARISH—National Drilling Co.'s Marsh McMillian 1, 26-9-6e, 6⅝ cas 2796 ft, tested sw sd 3097 ft.

CALDWELL PARISH—Monroe Pet. Corp.'s Burton 1, 36-12-2e, sd cur titles 2986 ft (formerly A. E. Hudson et al's test). Carter Bell et al's Taylor 1, ne se 17-14-4e, rig.

CLAIBORNE PARISH — Leue Oil Co.'s Kinder 1, sw se 2-21-7w, 12½ cas 152 ft, sd 1550 ft.

CONCORDIA PARISH — United Gas Pub. Serv. Co.'s Hughes 1, 49-8n-10e, 12½ cas 198 ft, tested dry through ds 1482 ft, dr 1740 ft.

DE SOTO PARISH — Rellitt O&G Co.'s Cannon Hrs. 1, nw ne 12-11-16, sp 10-inch 60 ft, dr 100 ft. W. H. Weichert's H. Smith 1, 31-14-15, top gas sand 1653 ft, top chalk 1901 ft, sd 2350 ft. Neff et al's Ramsey 1, 33-13-16, dry abn, td 3081 ft. E. T. Oakes' Johnson 1, 30-13-15, 10-inch 80 ft base, Midway 1378 ft, coring 1462 ft. Walters & Nicholson's Jim Guy 1, 3-11-13, dk.

NATCHITOCHES PARISH—C. M. Talley et al's Talley 1, 29-11-10, tested dry show oil in bro sand and shale 1256-69 ft, dry 1380 ft, sd wo. W. M. Coates et al's Collins 1, sw nw ne 28-9-10, base Midway chalk 2612 ft, base hd lime 4039 ft, tested 15 joints mud and sw 4020-91 ft, ta 4091 ft. J. W. Cooper et al's Cooper 1, 35-11-10, sd 3156 ft; Cooper 2-A, 35-11-10, top chalk 1400 ft, sd 1515 ft.

RED RIVER PARISH—Mack Jourden Co.'s Lockett 1, 32-13-10, 10-inch 90 ft, sd repr rig 800 ft.

SABINE PARISH—J. C. Walton's Sabine 1, ne nw 11-7-12, 6⅝ cas 2119 ft, sd 2376 ft. Lacey Prod. Co.'s Cooper 1, 30-8-11, top chalk 2306 ft, 6⅝ cas 2270 ft, wosr, td 2620 ft. Houston-Sabine Prod. Co.'s (formerly Triangle Pet. Co.) Sabine 1 (formerly 2), 36-8-12, 10-inch 85 ft, coring 2200 ft. J. J. Kean's Belton 1, se sw ne 31-9-13, top marl 1590 ft, claim core showing oil wo 8-inch cas, td 1600 ft. Jno. Woodley's Sabine 1, ne se 12-8-12, 10-inch 103 ft, 6⅝ cas 2310 ft, top marl 2312 ft, base marl 2392 ft, dry abn, td in chalk 2716 ft. H. W. Perritt's Bowman-Hicks 4, se ne 2-7-12, sp dr 1600 ft; Boring 1, ne nw 11-7-12, 10-inch 85 ft, 6-inch 2238 ft, wosr 2000 ft oil hole, td 2602 ft. A. H. Thames' Edwards Est. 1, ne se 8-8-13, 10-inch 100 ft, sd 1200 ft. R. L. Gay, Tr.'s, Long-Bell A-1, ne nw 10-8-13, 12½ cas 105 ft, top marl 1897 ft, base marl 1950 ft, dr 3179 ft. Jordan Drilling Co.'s La. Long Leaf 2, sw se 3-7-11, 10-inch 103 ft, 6⅝ cas 2350 ft, flowing by heads est 100 bbls day wo gauge, td 2455 ft; McCormick 1, sw se 2-7-11, lcn. Gautier et al's Meshell 1, se nw 30-8-12, top marl 2224 ft, sd 2260 ft. Ohio Oil Co.'s Bowman-Hicks 9, nw se 35-8-12, lcn; Bowman-Hicks 10, sw ne 35-8-12, lcn; Bowman-Hicks 11, sw se 2-7-12, lcn. Durham Oil Co.'s Polly 1, sw ne 18-8-12, 10-inch 105 ft, 8¼ cas 2087 ft, base chalk 2595 ft, dry abn, td 2722 ft. Sabine Royalties Co., Inc.'s, Bill Hill 1, nw ne ne 5-7-11, 10-inch 105 ft, top marl 2217 ft, 6-inch 2230 ft, dr deeper with CT, td 2506 ft; Bill Hill 2, sw se se 32-8-11 (cor lcn), rig; Skinner 1, se sw ne 5-8-11, 6⅝ cas 2253 ft, top marl 2270 ft, core marl 2360 ft. Diffie & Barrett's Lites 1, 34-8-11, 10-inch 105 ft, sd. Hawkins et al's Moran 1, se ne 1-7-11, 10-inch 100 ft, 6-inch 2428 ft, 400 ft oil in hole, wosr, td 2620 ft. Hawkins & Antoon's Newton 1, 1-7-11, ds stuck, shot it in two, skidding over for new hole, td 1550 ft. Lyons & Neely's Byrd 2, 1-7-11, 10-inch 100 ft, cemtd 6-inch 2373 ft, td 2376 ft; Duggan 1, nw se 14-7-11, dk pat. Texas Co.'s De Latin 1, nw se 3-7-11, sp 10-inch 95 ft, dr 1550 ft. W. M. Coates' R. L. Gay 2, 1-7-12, 6-inch 2186 ft, top marl 2202 ft, top chalk 2290 ft, flowing est 200 bbls day, wo gauge, td 2294 ft; McNeely 1, 14-7-11, sp 10-inch 90 ft, dr 1700 ft; Williams 1, 23-7-11, sp 10-inch 85 ft, dr 1900 ft. Pelican Nat. Gas Co.'s La. Long Leaf 9, sw se 3-7-11, 10-inch 85 ft, 6-inch 2363 ft, dry abn, td 2671 ft. Stovall Drilling Co.'s Nulton 1, 1-7-13, 10-inch 100 ft, core 2100 ft. Sabine Prod. Co.'s Pearce 2, se nw 10-7-11, 10-inch 100 ft, cemtd 6-inch 2320 ft, top marl 2330 ft. Eddie Self's Jacobs 1, sw se 1-7-11, 10-inch 105 ft, cemtd 6-inch 2416 ft. L. K. McGuffin's Bush 1, nw sw 1-7-11, rig. Geo. Pipes, Tr.'s, Byrd 1, sw nw 1-7-11, 10-inch 95 ft, core 2300 ft. Zeke Lehman's McCormick 1, ne sw 2-7-11, rig. A. F. Tarver's Cutrer 1, nw nw 12-7-11, sp 10-inch 80 ft, dr 1500 ft. Ben Merritt, Tr.'s, Byrd 2, ne sw 1-7-11, dk. H. W. Perritt's Bowman-Hicks 5, sw ne 2-7-12, lcn. Roy Baker's Sabine 1, ne nw 11-7-12, lcn.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12, sd for fuel 3570 ft.

WEBSTER PARISH—D. M. Coyle's Frazier 1, ne se 27-23-11, dk. Cassidy & Davis' Nickerson 1, ne sw 29-23-10, sd 160 ft.

WEST CARROLL PARISH — United Gas Pub. Serv. Co.'s Pioneer Cooperage 1, 29-21-8e, 15½ cas 167 ft, 10-inch 867 ft, dr 2508 ft.

NORTHERN CALIFORNIA

KERN COUNTY

BELRIDGE—Belridge Oil Co.'s No. 27-64, dr shale 4565 ft; No. 35-8, 35-27-20, dr oil sand 4950 ft, 10¾-in cas cmt 4915 ft; Nos. 35-33, 35-48, and 35-49, all on 35-27-20, are sd. Continental's Result 2, 36-27-20, dr shale 4808 ft. General Pet.'s Berry 1, 30-28-21, running 13⅜-in cas, td 4535 ft. Ohio's Bloemer 1, 36-27-20, sd 5985 ft. Reward Oil Co.'s Associated 4, 34-27-20, dr oil sand 5450 ft, will make production test soon. Standard's McPhail 2,

36-27-20, sr 5450 ft. K. C. Wallace's No. 1, 32-29-21, 6-in cas re-cmt 2590 ft, td 4212 ft.

BLACKWELL'S CORNER — F. B. Langstroth's No. 1, 14-26-19, rigged to sp. E. J. Miley et al's No. 1, 17-26-19, installing equipment.

BUTTONWILLOW—Wilshire Oil Co.'s Nordon 1, 7-29-24, co 6990 ft, hole caving.

CARIZZO PLAINS — Panorama Oil Co.'s Panorama 1, 7-31-21, fsh for drill pipe 4010 ft. Tray El Oil Co.'s No. 1, 7-32-22, dr hard sand 1525 ft.

DEVIL'S DEN—Standard's Alferitz 1, 14-25-18, plugged to 2035 ft, td 3206 ft.

EL TEJON—J. J. Ritchie's No. 1, 33-11-19, dr hard sand 5710 ft.

MOJAVE—Kendall Development Co.'s No. 1, 27-11-9, dr sand 175 ft.

SEMITROPIC—Shell's Williams 1, 17-27-23, co above plug at 5570 ft, td 9700 ft, showing water and sand, little gas.

WEED PATCH—Alpine Oil Co.'s DiGiorgio 1, 13-31-29, dr hard sand 3780 ft. Mohawk Oil Co.'s Earl 1, 4-31-29, rigged to sp. Wharton 1, 32-30-29, sd 6150 ft. Osborn & Colter's Shell-Duff 1, 15-30-29, dr shale 3515 ft. Shell's Morris 1, 32-30-29, dr shale 5710 ft; Porter 1, 29-30-29, sd 6410 ft; Porter-Day 1, 29-30-29, plugged to 7900 ft, td 8419 ft, water broke in while bailing, will test showings above present plug.

SANTA BARBARA COUNTY

COAL OIL POINT—Bolsa Chica Oil Corp.'s Augur 191-1, 24-4-29, plugged back from 4191 ft, preparing to re-drill.

GATO RIDGE — Barnsdall's Tognazzini 1, 9-8-32, testing water shutoff at 6510 ft, 10⅝-in cas cmt at 1750 ft.

GOLETA—General Pet.'s More 3, co 5183 ft, gas showings, will make test. George W. Johnson's Duncan 1A, 19-4-27, straightening hole, td 3065 ft. Southern California Drilling Co.'s Bishop 1, 12-4-29, dr shale 3055 ft.

LOS ALAMOS—N. S. Wilson's Midwest 1, 2-7-33, dr shale 2350 ft.

LOS OLIVAS—Zaca Oil Co.'s No. 1, 20-7-31, rig.

NAPLES—J. H. Cochran's No. 1, 7-4-29, will deepen from 5135 ft.

ORELLA — General Pet.'s Erburo 10, well caught fire after blowout at 2669 ft, will repair equipment and continue test. Oakburn Oil Co.'s Sperry 169-1, well blew out and caught fire at 2821 ft, will re-build rig and kill flow of gas and water.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 6630 ft.

VENTURA COUNTY

CONEJO—Mex Cal Oil & Refining Co.'s Burlingham 1, 12-1-20, co 120 ft. Triunfo Oil Co.'s No. 1, 24-1-19, dr shale 2405 ft.

OXNARD—Magu Syn.'s Utt 1, 17-1-21, dr rock 3919 ft.

RINCON—Chanslor-Canfield Midway Oil Co.'s Hobson A2, 23-3-24, circulating to make production test, td 10,030 ft. Continental's Grubb 1, 23-3-24, dr shale 4000 ft.

SANTA MONICA MOUNTAINS—Olympic Corp.'s Hearst 1, 18-1-17, dr hard sand 5700 ft.

SESPE—Merchants Pet. Co.'s Cochran 1, 1-4-20, running tubing to test on pump, td 1322 ft. Superior's Kirtlan 1, 15-4-21, dr shale 6900 ft.

MISCELLANEOUS

FRESNO COUNTY — Associated's Mitchell 1, 22-21-15, dr shale 4780 ft.

KINGS COUNTY—L. W. Seymour's No. 1, 36-23-17, co 3540 ft. Irma Investment Co.'s No. 1, 7-23-20, co 1350 ft. Kettleman-Lakeview Oil Co.'s No. 1, 11-23-19, co 1285 ft. Valley Exploration Co.'s Brennan 1, 20-23-20, dr shale 3758 ft.

MENDOCINO COUNTY — Twin State Oil Co.'s Soldani 1, 14-12-17, sd 6597 ft.

SAN LUIS OBISPO COUNTY—C. J. Schilling's No. 1, dr shale 1150 ft. Cities Service Pet. Co.'s No. 1, 20-28-15, dr shale 300 ft. Paso Robles Synd.'s Emerick 1, 34-27-11, dr on bailer, td 3970 ft. Latin-American Pet. Co.'s Whitley 1, 31-27-15, 8¼-in cas re-cmt 4255 ft, td 4618 ft.

SANTA CLARA COUNTY — Sargent Oil Co.'s No. 1, 1-12-3, rig.

SANTA CRUZ COUNTY—Wellton Oil & Gas Co.'s Galletly 1, sd 2880 ft.

TULARE COUNTY—Big Four Drilling Co.'s No. 1, 29-23-27, 4½-in cas cmt 4200 ft, td 4331 ft. Ducor Pet. Co.'s Zimmerman 1, 14-24-27, fsh for drill pipe 2180 ft. Fred N. Gholson's Chambay 1, 3-23-27, lcn. Turk and Campbell's Nevins 1, 34-22-27, 10¾-in cas cmt 953 ft, td 1392 f .t Larsen, Stanford & Ellis' No. 1, 20-24-23, dr shale 335 ft.

SOUTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
OLIVE—		
Texas' Olive Community 1, 7-4-9..	*	5435

ALHAMBRA — Fred H. Hammer's No. 2, 24-1-13, lcn.

BASSETT — Huntington Central Oil Co.'s Pellissier 1, 34-1-11, grading for rig.

BELL—Cudahay Community Oil Assn's No. 1, 30-2-12, sd 1330 ft.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr 300 ft.

CORONA—Western Gulf's Abacherli 1, 12-3-8, sd 3267 ft.

CULVER CITY — Olympic Oil & Realty Co.'s No. 1, 14-2-15, dr shale 6100 ft Taylor Oil Co.'s No. 1, 12-2-15, will deepen from 6080 ft.

FULLERTON — Standard's Bastanchury 1, 21-3-10, plugging back from 8145 ft for series of production tests.

HERMOSA BEACH—E. S. Cone's Kellogg-Burdick 1, 6-4-14, trying to shut off water, td 2645 ft; No. 2, 6-4-14, lcn; No. 3, 6-4-14, lcn. Corniel Oil Corp's No 1, 31-3-14, co 3100 ft. Hermosa Exploration Co.'s No. 1, pumping 100 bbls oil, 20 bbls water, td 3020 ft. Tulsa Oil Co.'s Hermosa 2, 6-4-14, co 3140 ft. Westwood Pet. Co.'s No. 1, 6-4-14, pumping 75 bbls, td 3169 ft.

LOMITA—Heller-Davis Oil Co.'s Hamlin 1, dr gray sand 4747 ft.

MANHATTAN BEACH — Staple Oil Co.'s No. 1, 24-35-15, dr shale 1345 ft.

NEWHALL—Electrological Pet. Corp.'s Overman 1, 6-3-16, sp. Guarantee Oil Co.'s Hammond 1, fsh 2990 ft. O. C. O. Oil Co.'s No. 1, 14-3-16, dr shale 567 ft.

NEWPORT — Nuoil Co.'s No. 1, 29-6-10, deepening from 1370 ft. Standard's Irvine 1, 26-6-10, dr shale 4770 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-2-15, dr shale 6135 ft.

OLINDA—Graham-Loftus Oil Co.'s No. 1, 18-3-9, dr hard sand 7610 ft.

PLAYA DEL REY — Mesmer City Realty Co.'s No. 1, 24-2-15, dr shale 5830 ft. West Port Oil Co.'s No. 1, 27-2-15, fsh for drill pipe 5960 ft.

PUENTE—Guarantee Oil Co.'s Rowland 1, 14-2-10, dr shale 4500 ft.

ROSEMEAD—Rancho Oil Corp.'s Harmon 1, 30-1-11, swabbing for production test, td 5975 ft.

REPETTO HILLS—Texas' F. M. 1, 4-2-12, dr rock 3717 ft.

SAN FERNANDO — El Caballero Estates Co.'s No. 1, 23-1-16, dr 250 ft.

SUNSET BEACH—Gieck Oil Co.'s No. 1, 20-5-11, dr shale 4075 ft. Walter F. Larson's Cavanaugh 1, 20-5-11, lcn. McGowan and Thomas' No. 1, 20-5-11, lcn; No. 2, 20-5-11, lcn. R. R. Ritchey's No. 1, 20-5-11, lcn; No. 2, 20-5-11, lcn. Albert Sellery and Eleanora D. Sellery's No. 1, 20-5-11, lcn. Eleanora D. Sellery's No. 1, 20-5-11, lcn. M. D. Skroopka 1, 20-5-11, lcn.

WILMINGTON — Pacific Coast Pet. Co.'s Watson 1, 29-4-13, coring oil sand and shale 3970 ft. George Tighe's No. 1, 28-4-13, new lcn.

YORBA LINDA—International Pet. Corp.'s Dricke 1, 21-3-19, lcn; Todd 1, 21-3-9, pumping oil and water, td 1875 ft.

KANSAS

MORTON COUNTY — Hydraulic Oil Co., State land 1, nw se, 22-34-43w, sd 3460 ft.

COWLEY COUNTY—Fisher et al, Hunt 1, c sw se se 11-34-3e, ru and sd.

SUMNER COUNTY—Spencer et al, Porter 1, ne sw se se 11-34-3e, ru and sd. Otstot et al, Warlow 2, c se nw se, 22-33-3w, dr 2450 ft.

COWLEY COUNTY—Lehman et al, Hill 1, se ne 27-33-4e, sd 680 ft. Roth and Farrout, Reidy 1, c sw nw ne, 8-32-4 east, td 1040 ft.

HARPER COUNTY—Beeler et al, Bear 1, c ne, 21-31-6w, td 1830 ft sd.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-29-21w, (6000 ft test) dr 4082 ft.

SEDGWICK COUNTY—Buck et al, McNaman 1, c ne nw nw 2-20-1e, 10-inch 2301 ft, hfw 2295-2370 ft, td 2440 ft.

FORD COUNTY—Swain et al, Henthorn 1, c nw 21-25-24w, 5-inch 4645 ft, sd 5105 ft.

STAFFORD COUNTY—Rosenthal, Stanolind & Amerada, Gray 1, c ne, 11-34-13w, 10-inch at 2201 ft, dr 2315 ft.

MARION COUNTY—Maidwell, La Master 1, nw c, 31-22-4e, td 650 ft.

COFFEY COUNTY—Hegberg et al, Kroft 1, se sw se, 30-22-14e, 10-inch 818 ft, sd 1565 ft. Roberts et al, Hay 1, sw se nw 32-22-15e, td 1250 ft, sd.

BARTON COUNTY—McCool et al, Isern 1, c sw se ne 12-20-11w, td 1600 ft, sd.

RUSH COUNTY—Dewey & Mitchell, Greenwalt 1, c sw, 17-19-16w, 6-inch 3275 ft, dr 3285 ft.

BARTON COUNTY—Skelton Oil, Ott 1, c se se, 16-19-14w, td 2252 ft, ur 8-inch.

RICE COUNTY—Solar Oil, Zink 1, se nw, 3-19-10w, (3400 ft sil. 1. test) ru and sd. Dettrick & Langston, Purcell 1, nw c, 33-19-9w, td 1547 ft, rng 10-inch.

CHASE COUNTY—Kline et al, Eliston 1-A, c se se, 21-19-6e, dr 583 ft.

BARTON COUNTY—Syndicate Oil, Boertz 1, c nw se ne, 13-18-12w, td 2450 ft.

RICE COUNTY — Allison & Fitzwilliams, Blake 1, ne nw, 9-18-10w, rig. McFadden & Shell, Jennings 1, c sw ne nw 29-18-6w, pb to SG 1130 ft, sd.

CHASE COUNTY—Borden et al, Atkinson 1, nw se, 18-18-7e, machine.

NESS COUNTY—Gypsy, Coleman 1, c sw ne, 25-17-25w, 3000 ft wih fsh liner 4690 ft td.

MORRIS COUNTY—Urschell et al, Bersuch 1, c nw se nw, 10-17-7e, ru and sd.

ELLSWORTH COUNTY — Alladin et al. Steddenberg 1, c sw, 22-15-10w, td 2065 ft ur 10-in.

SALINE COUNTY—Stanolind et al, Martin Community 1, ne se se, 3-17-3w, td 3299 ft so; ur 6-in.

MORRIS COUNTY—Hankenson et al, Cessnum 1, sw se 24-16-9e, td 2260 ft co.

FRANKLIN COUNTY—Fields et al, Usher 1, se c 35-16-17e, sd 400 ft.

RUSSELL COUNTY—Hall et al, Mills 1, se sw se, 30-14-13w, 8-in 2890 ft so, 2902 ft; 2902-8 ft 1100 ft of oih 2 hrs; dr 3090 ft.

ELLSWORTH COUNTY — Milton et al, Kaster 1, se ne, 6-14-1w, 6-inch 2962 ft, dr 2976 ft. Hershey et al, Schaltz 1, c ne, 9-14-8w, dr 2080 ft.

OSAGE COUNTY—Riggs-Smith, Wood 1, c se nw, 31-14-15e, 10-in 1050 ft sd.

RUSSELL COUNTY — Austin Drlg. Co., Rockefeller 1, se c 6-13-12w, 3320-25 ft hfw td 3374 ft sd.

SALINE COUNTY—Twin Mounds Oil Co., Weis 1, c w½ ne nw, 30-13-4w (owd) 19-in 1010 ft; sd 2710 ft.

DICKINSON COUNTY—Severs et al, Livingood 1, ne sw 13-13-2e, sd 3850 ft.

RUSSELL COUNTY—Gilbreath et al, Britton 1, c ne 33-11-13w, 3122-36 so, td 3260 ft sd.

GRAHAM COUNTY — Schleimeyer et al, Clark 1, c sw ne ne, 11-9-25w, 6-in 4221 ft dr 4436 ft.

CLAY COUNTY—Nebraska Oil, Tivier 1, sw c 19-8-9e, sd 2700 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, 10-in 1178 ft dr 2015 ft.

ROOKS COUNTY—Empire, Holsman 1, c sw ne 17-7-20w, 6-in 3350 ft dr 3360 ft.

WASHINGTON COUNTY—Sincox, Penwell 1, nw se nw, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al. Unknown 1, sw c 3-2-35w, 6-in 2995 ft dr 3150 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros.' Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al's Sornick 1, nw c se, hfw 2070-2170 ft sd 2700 ft. T 26n, R 1w, Sec. 32, Boucher et al's Jefferson 1, ne c sw, sd 3502 ft.

HARPER COUNTY—T 25n, R 20w, Sec. 12, Empire's Bruce 1, sw c ne ne sw, sd 7936 ft.

GRANT COUNTY—T 25n, R 4w, Ses. 22, Cowden's Collmer 2, ne c se ne sw, sd 5640 ft lost tools.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al's Acre 1, c sw ne, show gas 5298-5303 ft, sd 5330 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec.

9, Pulse & Beamer's White 1, se c nw, sd 5850 ft.

NOBLE COUNTY—T 21n, R 1e, Sec. 12, Barnsdall et al's Miksch 1, nw c sw, sd 4926 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co.'s Phillips 1, c nw sw, sd 4600 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 23, Healey et al's Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, Sumitt Drlg. Co.'s Hays 1, nw ne nw, show oil 3185-3208 ft, sd 3250 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al's McFadden 1, ne c sw, rig. T 22n, R 5e, Sec. 2, Sherry et al's Milsap 1, se c sw, sd 1750 ft. T 20n, R 5e, Sec. 6, W. A. Rookstool's Bery 1, nw ne sw, sd 1951 ft show gas.

LINCOLN COUNTY—T 13n, R 6e, Sec. 8, Atlantic et al's Beebee 1, sw ne sw, lcn. T 13n, R 6e, Sec. 9, Mid-Continent et al's Lillie 1, ne c se, ¶6 4035-68 ft, dr 4083 ft.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al's Shepperd 1, se nw sw, sd 3690 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, sw nw se, show gas 5654-64, dr 5706 ft. T 8n, R 14e, Sec. 14, C. O. Cannady's Smith 1, sw c ne nw nw, rig and tools. T 7n, R 14e, Sec. 5, C. O. Cannady et al's Travis 1, c sw ne, rig.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English's Weaver 1, c nw se, sd 1542 ft.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff's Trustee, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 8n, R 3e, Sec. 21, Droppleman et al, Jones 1, se c nw, cored show oil 4675 ft, cemtg casing.

SEMINOLE COUNTY—T 6n, R 7e, Sec. 15, Magnolia, Powell 1, nw sw se, dr 4495 ft.

ROGER MILLS COUNTY—T12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, sd 4830 ft. T 11n, R 26w, Sec. 4, J. J. Rook and Palmer, Davis 1, c nw ne (owd) sd 2960 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Snodgrass et al, Blocker 1, nw c, sd 1875 ft. T 8n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1050 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffell 1, nw c, sand 1462-1501 ft, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French, Murphy 1, sw nw se, sd 1654 ft.

STEPHENS COUNTY—T 1n, R 8w, Sec. 25, Rose Southard, McKinney 1, ne c, sd 1053 ft.

HUGHES COUNTY—T 5n, R 11e, Sec. 15, J. J. Wright, Roberts 1, se c sw, 2M gas 915-18 ft, sd 1645 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee Oil Co., Phillips 1, ne c sw, dr 3108 ft.

COAL COUNTY — T 2n, R 8e, Sec. 10, Whitney et al, Miller 1, se c ne, (owd) sd 760 ft. T 1n, R 8e, Sec. 35, W. E. McCraw, Stiring 1, ne c se, dr 1217 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, ne c, show gas 360-72 ft, sd 500 ft.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne se sw, sd 660 ft.

ARKANSAS

Company, Well and Location		Initial Production Bbls.	Depth
LA FAYETTE COUNTY—			
Smitherman & McDonald, Bodcaw 1, 16-15-22	. . . . .	*	1199
MILLER COUNTY—			
East Texas O&G Co., Hervey 1, 2-15-26	. . . . .	*	890
UNION COUNTY—			
Rice et al, Whatley 1, 7-17-15	. . . . .	*	2186
Wilson & Chapman, Ned Parker 1, 3-18-13	. . . . .	268	3565

CHICOT COUNTY—W. R. Smith's Lytle 1, 31-18-3, ta 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, nw ne 4-20-8e, sd cur title 1214 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd 3740 ft.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 12½ cas 75 ft, claim oil sand 489-502 ft, sd 778 ft. Modisette et al's Sharkles 1, sw ne 33-16-19, 10-inch 42 ft, 8-inch cemtd 300 ft, dr hd gumbo 1848 ft.

DALLAS COUNTY—Jno. James, Tr.'s, Fordyce Lbr. Co. 1, ne nw 11-9s-15w, 10-inch 175 ft, sd 2520 ft. E. C. Brewer, Tr.'s Hillman 1, se ne 20-10-13, 10-inch 138 ft, sd in white sand 2869 ft.

GRANT COUNTY — Spann & McClung's Sarah Page 1, sw nw 3-3-12, ur 7-inch cas, td in soft white sand 1024 ft.

HOT SPRINGS COUNTY—Jno. Watkins, Tr.'s, Cunningham 1, ne ne 11-5-16, sd 220 ft.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig. McIver et al's Hattle 1, nw ne 1-20-26, 12½ cas 115 ft, sd 2520 ft. Smitherman & McDonald's Bodcaw 1, se nw ne 16-15-22, 12½ cas 42 ft, 8¼ cas 1176 ft, 6⅝ cas 1193 ft, showed considerable heavy oil on test but sw appeared, sw abn, td 1199 ft.

LAWRENCE COUNTY—Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LINCOLN COUNTY — L. B. Cook, Tr.'s, McGehee Pltg. Co. 1, ne sw 5-8s-7w, 12½ cas 90 ft, ds recovered, dr 1040 ft.

LITTLE RIVER COUNTY—Fay Roberts Oil Co.'s Russell 1, nw nw 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, 6⅝ cas 2792 ft, 4½ cas 2957 ft, sd 2968 ft. East Texas O&G Co.'s

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OUACHITA COUNTY—Copenhaver et al's Elliott 1, se se 11-15-17, 6-inch 2185 ft, dry sd 2210 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, show heavy oil 567 ft, ta in lime rock 2920 ft. E. R. Henderson's Lee 1, sw se 31-8s-24w, 10-inch 198 ft, dr hd rock 500 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, fsh cas, td 1536 ft. Waldron O&G Co.'s J. G. White 1, sw nw 17-3n-29w, 10-inch 225 ft, sd wo cas, td 1860 ft (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd after testing sw, td 2515 ft.

SEVIER COUNTY—Tri-States O&G Co.'s Bank of DeQueen 1, s½ sw 34-8s-32w, rig.

UNION COUNTY—Rice et al's Whatley 1, 7-17-15, dry abn in sandy shale td 2186 ft. Southern Prod. Co.'s Wingfield 1, se nw 16-19-15, 10-in 103 ft sd 2608 ft. Lion O. R. Co. et al's Guy F. Hayes A-9, sw ne 4-16-15, 12½ cas 270 dr tf blue sandy lime 3659 ft (5000 ft test). Wilson & Chapman's Ned Parker 1, nw se 3-18-13, 10-in 230 ft cmtd 6⅝ cas 3554 ft top sand 3561 ft flowing by heads thru 2¼-in tube 268 bbls oil day td 3565 ft. Hadley 1, ne sw 3-18-13, 10-in 102 ft 600 ft fluid in hole 30 per cent sw td 3570 ft. Atkins 1, sw ne 3-18-13, rig. H. Norman 1, se ne 3-18-13, lcn. Doty A-1, ne se 3-18-13, lcn. Doty B-1, ne se 3-18-13, lcn. Marine Oil Co.'s P. Winn A-2, nw nw 11-18-13, 10-in 276 ft cored oil sand 3582-86 ft cmtd 6⅝ cas 3579 ft bailed and swabbed 80 per cent sw ta td 3586 ft. Union Sawmill 1, se se 3-18-13, 10-in 236 ft dr 3420 ft.

WASHINGTON COUNTY — Taylor et al's Runny 1, 1-13-29, sd 1702 ft. Lincoln Lease Holding Synd's Townsite 1, 30-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, ta 650 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd while fsh cas td 5710 ft.

MISSISSIPPI

CLAY COUNTY—Ohio Oil Co.'s Cantrell 1, ne ne 16-15-5e, elev 270 ft, 13⅜ cas 1389 ft, 9⅝ cas 2929 ft, dr hard pyrites traces iron, with hole dry, 3810 ft.

CHICKASAW COUNTY — Hightower & Golsan's Fleming 1, 20-13s-3e, sd wo 6-inch cas, td 1505 ft.

COVINGTON COUNTY (Colins Dist.)—Gulf Ref. Co.'s Pope 1, 35-8n-16w, co to bottom at 3000 ft, dr 3015 ft, to go to 4500 ft.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s, J. H. Keyes 1, nw ne 21-2n-10e, 15½ cas 104 ft, top Cane River 1090 ft, top Wilcox 1529 ft, dr Wilcox 1605 ft.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, sw ne 2-15-19, sd in brown sand 3007 ft. P. J. McAlpine's Cowart 1, ne sw 2-12-19, 10-inch 694 ft, 8¼ cas 1276 ft, cemtd 6⅝ cas 2208 ft in chalky lime to shut off sw, dr 2219 ft. Associated Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NOXUBEE COUNTY (Macon Dist.)—Geo. R. Thompson, Tr.'s, Donahue 1, 25-16n-17e, elev 280 ft, materials.

RANKIN COUNTY (Jackson Dist.)—Love et al's Muse 1, se se 32-7-4e, 12½ cas 600 ft, top black shale 3740 ft, dr shale and bldrs 4000 ft; Moore 1, se nw 28-6-2e, ta 900 ft. Atkisson et al's Valentour 1, nw nw 18-5-2e, rig.

SCOTT COUNTY—Culley et al's Owen 1, se ne 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw se 9-18n-2e, dr 498 ft. Vicksburg O&G Co.'s Dornbusch 1, sw ne 8-18n-5e, ta 1600 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, base red beds 2739 ft, cored sand 3117-23 ft, sr at 2600 ft, arr make ds test, td 3137 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collett et al's Blackmer 2, sw nw 14-11s-4w, 12½ cas 103 ft, 8⅝ cas 2428 ft, dr hd shale streaks calcite 3100 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, sw ne 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, 10-inch 130 ft, driving 8-inch pipe 1000 ft; Hobson Bros. 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, sd 700 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, dr gray lime and shale 2250 ft.

WYOMING

CARBON—Midwest Refining Co., U. P. 1, 27-11-81, dr bel 2540 ft. P. & R., 19-20-83, dr 152 ft. P. & R., 7-25-86, repairing, td 2030 ft.

FREMONT—Texas Prod. Co.'s State 1, 36-33-95, sd for orders 4485 ft. P. & R. 1, 33-34-92, dr 5240 ft. Ward O&G Co., 28-34-90, dr bel 2100 ft. Wiebolt et al, 2-35-99, sd, probably to abn.

HOT SPRINGS—Grebo Roy., Inc., 3-47-100, set 12½-inch at 836 ft.

LARAMIE—Prairie O&G Co., Warren 1, 22-13-68, spd.

NATRONA—Summit Oil Co., 21-33n-80w, sd 1220 ft. Midwest's 11, nw 32-34n-77, stand 5340 ft. Cuyler Oil Co., 23-36n-85w, dr 1450 ft. Golden West Oil Co., 36-36-81, co 1265 ft. Midwest's Midway 1, ne 23-35n-79w, plug back to 5959 ft, cem.

NIOBRARA—West Virginia Synd., 7-35-62, td 987 ft, cas trouble. Phillips Pete Co., sw¼ se¼ 32-34n-64w, oil show 375 ft.

PARK—Resolute Oil Co., 17-57-101, dr 8545 ft and flow by heads.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, dr 4790 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, prep to cem 15½-inch at 1000 ft. Gose Oil Synd., 28-47-65, resum 4900 ft.

NEW MEXICO

CHAVES—Warman Oil Trust, Siebert 1, ne 27-13-24, stand 2686 ft. Neal et al, Russell 1, nw 21-14-25e, stand 2320 ft.

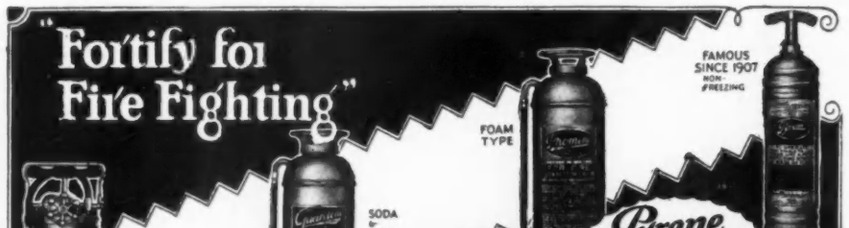
DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, ur cas, td 3150 ft.

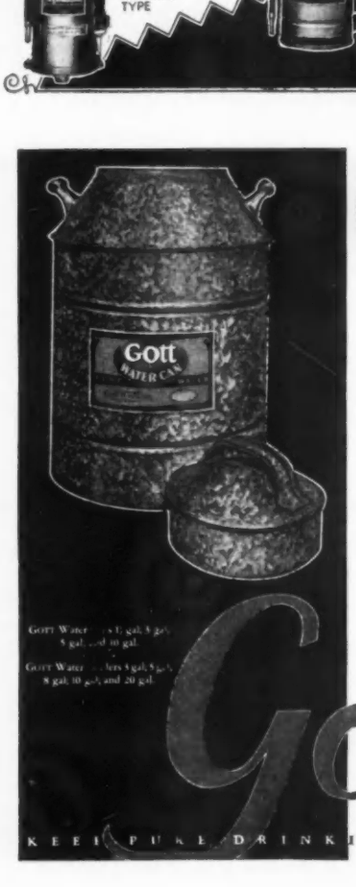
GUADALUPE—N. M. Prod. & Ref. Co., McMullen 1, 24-5n-16e, dr 105 ft.

HARDING—Kumbaca O&G Co., Kerlin 1, se 34-21s-30e, show gas 1000 ft.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10w, wtg cas 6085 ft.

McKINLEY—J. W. Halsell's 1, 17-18-9w, sd 3255 ft. Wms et al's A. T. S. F. 1, se 19-18n-





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8, stand 1900 ft. United Kern Pete, Inc., sw 1-18n-11w, location. Dysart et al, Dysart 2, ne 14-14n-10w, prep to set 8¼-inch at 1285 ft. Johnswood Oil Co., Hannett 1, sw 12-15n-10w, mvg in.

MORA—Fulton Pete Co.'s Santa Fe Diox-Ice Co., Wagonmound 1, ne 14-19-21, dr 1230 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, wtg for equip., 1005 ft. Pasotero Oil Corp., Evans 1, sd 22-24s-12e, mvg in.

RIO ARRIBA—Berrenger et al's Hartmen 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 12-29n-7w, dr 1000 ft.

ROOSEVELT—Peterson et al, Good 1, ne 32-5s-30e, mvg in.

SAN JUAN—Kutz Canon O&G Co.'s Day 1, se 20-28n-10w, dr 3174 ft. Rio Grande Dev. Co.'s 2, 9-29-11, stand 1515 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, fsh for dr pipe, td 4730 ft. San Juan Leaseholds, Bowman 3, ne 30-30-15, sd 2685 ft. Reserve Oil Co., Reserve 3, se 36-22n-14w, ur to 748 ft. R. C. Oswell et al, nw 34-30n-11w, dr 415 ft. Wms et al, Stallings 1, sw 17-25n-15w, spd 35 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2340 ft. Starr Oil Co.'s Adams 1, ne 25-17-16e, wtg cable at 3700 ft. Cibola Pete Co.'s Crown 1, se 9-13n-14e, prep to resume 750 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 12-12n-22e, prep to res 1415 ft. Con-O-Kul Oil's Cherryvale 1, ne 34-17n-21e, dr 730 ft.

SANTA FE—Jones, Owsley, et al, Cantwell 1, 5-10n-9e, spd 65 ft.

TORRANCE—Wms. et al's Staplin 1, ne 16-8n-10e, ready to res 1643 ft. J. B. Witt O&G Co., Kutchem 1, 12-7-7e, gas at 1240 ft to 1340 ft, estimated at 200,000 ft.

COLORADO

ADAMS—N. M. Slatt's 1, se 27-26-64w, carry 6⅝-inch at 3565 ft.

ARAPAHOE—McDeb Drlg. Co.'s Fitzsimmons 1, ne 7-4s-66w, show gas 5838 ft.

BACA—A. R. Jones Oil & Optg Co., Boice Cattle 1, 22-34-42w, sdtr cas at 4965 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, sd 1125 ft.

GRAND—Oil Mineral Land, Inc., McElroy 1, sw 14-2n-81w, stand 545 ft.

HUERFANO—Parker Club, Inc., Fee 1, se 4-28s-68w, much hole trouble, td 4116 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, dr 3917 ft.

LAS ANIMAS — Oklahoma Drlg. Assn'n, Radcliffe 1, ne 28-26-52, sd 100 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, lcn. Klem Pete Corp.'s Olbert 1, se 9-25n-12w, stand 3125 ft. Murchison Oil Co., Doescher 1, nw 29-33n-12, co 1225 ft.

LINCOLN — Eastern Colorado Oil Corp.'s State 1, 36-14n-57w, ur 4¾-inch to 3380 ft.

MONTEZUMA—G. H. Talcott et al's McElmo 1, 7-35n-16w, sd 635 ft. Haller et al, Carr 2, sw 33-36n-14w, dr 745 ft.

MONTROSE—Uncompahgre O&G Co., Title & Trust 2, 27-50n-10w, dr 936 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-57w, sd to install rotary 4090 ft.

PUEBLO—Anchor Oil Co.'s Easley 1, sw 35-22s-57w, stand 532 ft.

PARK—So. Park Oil Co.'s Milligan 1, se 13-8s-76w, dr 2075 ft. So. Park O&G Co.'s Easche 1, ne 5-9s-76w, dr 2260 ft.

RIO BLANCO—California Co.'s Raden 1, se 30-2n-102w, prep to spud. Magnolia Pete Co., Maddock 1, se 9-2s-96w, mvg in.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4-56, stand 1510 ft.

WELD—Reiter-Foster and Platte Valley Pete Corp., Johnson 1, nw 24-6n-61w, dr 4230 ft. Aztec Corp., Kirchoff 1, se 1-6n-61w, lcn.

MONTANA

CASCADE—Andover Oil Co.'s Floweree 1, se 29-21-2w, td 1405 ft.

CHOTEAU — Northern States Oil Co.'s Woodward 1, sw 20-14n-24e, dr bel 2400 ft. Melton Corp., 24-21n-17e, cas set 2825 ft, dr ahead. Pownam Oil Co., 24-19-11e, fsh 150 ft. Williston Shelby O&G Co., Flack 1, ne 12-28-11, wso 2830 ft.

GALLATIN—Gallatin Valley Oil Co., nw 1-1n-4e, dr bel 330 ft.

GLACIER—Fulton Pete Corp.'s Blackfeet 1,

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ne 28-36n-12w, dr 1790 ft, caving hole. B. & H. Oil Co.'s Haines 1, se 2-34-6w, try to test, td 2762 ft. Jeffries-Hoerr's Dawson 1, ne 7-31-12w, resum 3000 ft. Montana Utilities Co., Hagland 1, sw 13-34-6w, stand 20 ft.

LIBERTY—Northland O&G Co.'s Yurman 1, 32-33n-5e, dr 3670 ft. Sunburst, McLaren 1, se 8-37-6e, sd 3115 ft. C. Howard, Schoonover 1, se 18-36-6e, prep to produce, td 2247 ft. Peoples O&G Co., First Nat'l Bank 1, nw 17-36-6e, rig.

ROSEBUD—Prairie O&G Co., 1-X, 26-10-39e, cem whipstock at 1900 ft, td 2415 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, dr 300 ft. Earl Oil Corp., Gad 1, se 22-22-8w, dr 2050 ft.

TOOLE—Liquid Gold Oil Co.'s Roberts 1, ne 25-36-12, ur, td 2430 ft. International Roy. Hold. Co.'s Henry 1, sw 26-35-36, pull 8¼-inch 2650 ft. A-1 Pete Co., 24-36-1e, sd 1555 ft. Campbell-Mont. Pete Corp., nw 29-36-2e, validation. Oregon Oil Synd., se 20-36-2e, mvg in.

YELLOWSTONE—Peter Antonioli, 21-2n-25e, wait cas 1600 ft.

Letters to the Editor

▼ ▼

As a subscriber to THE OIL WEEKLY I noticed on page 75 of the edition under date of May 1, 1931, wherein you state that the deepest test ever drilled outside of the United States was "Guerrero No. 3" of the Cia. Petrolera Tamaulipas on Guerrero dome, Tamaulipas, Northern Mexico, and that this well was abandoned at the depth of 7897 feet.

While "Guerrero No. 3" as of 7897 feet may have been the deepest test ever drilled outside of the United States as of May 1, wish to state that the Penn Mex Fuel Company of Tuxpan, Ver., Mexico, are drilling a deep test on what is known as the southern extension of the "Golden Lane" near Tuxpan. This well is now shut down at the depth of 7960 feet while awaiting the arrival of additional drill stem to carry on to greater depths.

It might interest you to know that limestone in this well was encountered at 2267 feet with no breaks in this formation up to the present depth at which we have drilled some 400 feet over one mile in solid limestone. Believing that you might be interested in this well as it now stands as a record for a deep test outside of the United States and desiring to keep you advised as to future depths and any history regarding any future depths should you so desire, beg to remain,

Very truly yours,
PENN MEX FUEL COMPANY,
J. M. REARDON,
General Manager.
Tuxpan, Ver., Mexico.

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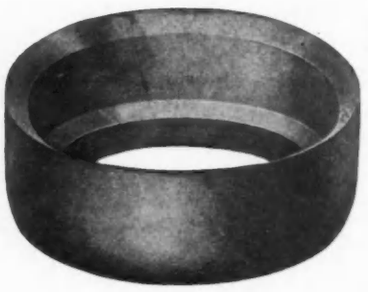

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OKLAHOMA QUARTERLY PRODUCTION REPORT FOR FIRST QUARTER 1931

Following is a list of companies and individuals reporting to the Oklahoma Corporation Commission on Gross Production. This list gives those companies and individuals which reported production valued at more than $5,000. Royalty returns have purposely been omitted from the list to help avoid confusion. (†) Indicates values shown includes gas values also.

Name and Address—	Barrels	Amount
Amerada Petr. Corp., Tulsa	513,729	$475,708
Atlantic Oil Producing Co., Dallas, Texas	157,276	136,393
Alco Royalties Corp., Tulsa	144	155
Argo Oil Co., Denver, Colo.	25,450	23,996
Alma Petr. Co., Oklahoma City	860	639
American Oil and Refg. Co., Oklahoma City	.....	14,117
Anderson-Prichard Co., Oklahoma City	95,975	†75,457
Anderson-Prichard Co., by Slick Urschel, Inc., Oklahoma City	19,820	16,235
Anderson-Prichard Co., Oklahoma City, by T. B. Slick Estate	11,757	11,739
Wm. H. Atkinson by Slick-Urschel, Inc.	110,605	98,663
Wm. H. Atkinson by Slick-Urschell, Inc.	.....	4,170
Arthur Oil Co., Sistersville, W. Va.	5,728	4,916
Barnsdall Oil Co., Tulsa	411,417	352,373
Blackwell Oil and Gas, Cushing	.....	192,655
Bullock Oil Co., Oklahoma City	83,140	78,117
Barbara Oil Co., Chicago, Ill.	4,892	3,757
Buell-Herndon & Co., Inc., Tulsa	28,911	27,667
J. Garfield Buell, Tulsa	2,492	2,383
British-American Oil Prod. Co., Tulsa	111,953	96,892
Bilbo Oil Corp., Madill	8,118	8,571
Bryan Petr. Co., Tulsa	5,758	5,394
Benedum-Trees Oil Co., Pittsburgh, Pa.	66,854	59,089
Bay State Oil & Gas Co., K. C., Mo.	11,022	10,450
Black-Sivalls and Bryson, Inc., Bartlesville	4,179	3,253
Burke-Greis Oil Co., Tulsa	.....	73,807
Brown-Barrett Oil Co., Production Trust No. 2, by Federal Natl. Bank, Trustee, Shawnee	16,680	14,450
Edwin G. Bradley, Wichita, Kans.	12,540	†11,766
Edwin G. Bradley, Wichita, Kas.	1,932	1,632
Baker and Strawn, Tulsa	6,566	†5,352
H. A. Born, Little Rock, Ark.	.....	6,774
Bisett-Lytle and Gray, Tulsa	12,024	9,226
Geo. S. Bole, Tulsa	6,034	†5,036
Bob Bradshaw, Trustee, Tulsa	15,769	13,787
British-American Oil Prod. Co., Tulsa	105,764	118,356
Champlin Refg. Co., Enid	148,256	112,740
Champlin Refg. Co., Enid	138,648	88,276
Cromwell-Franklin Oil Co., Oklahoma City	82,507	70,562
Cromwell-Franklin Oil Co., Oklahoma City, Tulsa (Fourth Quarter of 1930, not previously reported)	147,953	167,885
Carter Oil Co., Tulsa	1,645,418	1,418,159
Carter Oil Co., Tulsa (Suspense)	.....	14,595
Continental Oil Co., Ponca	397,554	361,839
Comar Oil Co., St. Louis	348,281	330,132
J. E. Crosbie, Inc., Tulsa	9,636	8,296
J. E. Crosbie, Inc., Tulsa	5,098	3,330
J. E. Crosbie & Crosbie & Robinson	13,040	11,352
J. E. Crosbie, Inc., Tulsa	1,671	1,585
J. E. Crosbie, Inc., Tulsa	503	437
Coline Oil Corp., Oklahoma City	174,322	148,109
Century Petr. Co., by Receivers, Okla. City	51,013	25,118
Chatham Oil Co., Tulsa	58,702	51,971
Capitol Producing and Refg. Co., Okla. City	42,477	27,610
Cudahy Oil Co., Cleveland, Ohio	10,693	7,548
J. S. Cosden, Inc., of Oklahoma, by Receivers	59,824	53,214
Consolidated Gas Utilities Co., Oklahoma City	5,640	†39,006
Clark & Cowden, Duncan	4,653	7,719
Edwin B. Cox & Jake L. Hammon, Ardmore	.....	7,570
G. W. Connelly, Caney, Kans.	.....	5,661
Wm. Jones Cook, Trustee, Muskogee	6,502	6,293
Deep Rock Oil and Refg. Co., Tulsa	8,516	7,889
Deep Rock Oil and Refg. Co., Tulsa	423,425	387,670
Deep Rock Oil and Refg. Co., Tulsa (Suspense)	.....	5,978
Duncan-Wichita Falls Pipe Line Co., Wichita Falls, Texas	10,452	7,827
Delaware Consolidated Oil Co., Tulsa	46,463	33,349
Dengail Oil and Gas, Oklahoma City	32,133	31,724
Delmar Oil Co., Bartlesville	11,730	10,192
Devonian Oil Co., Tulsa	94,418	86,417
Dunmar Oil Co., Duncan	9,531	7,889
Darby Lynde Co., Tulsa	65,248	61,192
Darby Petr. Co., Tulsa	245,485	†215,639
Empire Oil and Refg. Co., Bartlesville	380,332	337,664
Empire Oil and Refg. Co., Bartlesville (Suspense)	.....	52,333
Eason Oil Co., Enid	144,477	113,949
Eagle-Picher Mining and Smelting Co., Henryetta	2,130	†6,349
Elm Oil Co., Tulsa	9,223	7,609
Earlsboro Prod. Trust No. 2, Tulsa	8,807	6,891
F. L. Ketch, Trustee for Wirt Franklin	21,367	19,466
Wirt Franklin, Ardmore	508,220	406,761
Wirt Franklin, Ardmore	56,029	52,640
Wirt Franklin by Liberty Natl. Bank	2,872	2,476
Foster and Davis, Inc., Bartlesville	6,024	4,692
D. W. Franchit & Co., Tulsa	23,921	19,567
Farlyn Oil Co., Houston, Texas	11,527	9,605
Fern Oil Co., Yale	6,763	6,314
Finance Oil Co., Gawanda, N. Y.	8,428	6,973
J. S. Franks, Trustee, Oklahoma City	.....	19,548
Gypsy Oil Co., Tulsa	1,720,683	1,591,422
Gypsy Oil Co., Tulsa	117,802	105,821
Gypsy Oil Co., Tulsa, Paid for others	.....	7,931
Gypsy Oil Co., Tulsa, (Suspense)	.....	42,481
John B. Grieves, Terlton	.....	9,942
Gled Oil Co., Tulsa	28,783	25,588
Gates Oil Co., Ardmore	8,992	6,494
Gilmer Oil Co., Ardmore	29,342	21,462
Gilcrease Oil Co., Tulsa	18,401	11,864
Graokla Gas Co., Wichita Falls, Texas	28,719	21,553
F. A. Gillespie and Sons Co., Tulsa	14,863	10,616
Grimes and Gillespie, Tulsa	9,432	7,720
Walter H. Gant and Knox L. Garvin, Ardmore	.....	5,318
Glass & Harmon, Nowata	10,601	8,811
Houston Oil Co. of Tex., Houston, Texas	24,606	22,180
Home Stake Oil and Gas, Tulsa	.....	41,482
W. T. Hales Okla. City	32,745	26,153
Harland Oil Co., Walco	13,684	9,483
Highway Oil Refg., Tulsa	20,125	18,941
J. A. Hull Co., Tulsa	25,435	24,068
C. C. Harmon, Nowata	9,610	8,007
C. C. Harmon, Nowata	2,730	2,287
Harmon and Reed, Nowata	5,677	4,628
Harmon and Glass, Nowata	10,601	8,811
Harmon, Robertson and Glass, Nowata	3,293	2,578
Heenan-Coe Co., Okla. City	44,870	42,475
Hay-McClure, Inc., Peoria, Ill.	7,725	7,106
Harris and Haun, Inc., Blackwell	.....	8,549

Production and Valuation of 10 Leading Oklahoma Producing Companies for First Quarter, 1931

Company—	First Quarter 1931 Barrels	First Quarter 1931 Value	Fourth Quarter 1930 Barrels	Fourth Quarter 1930 Value	Third Quarter 1930 Barrels	Third Quarter 1930 Value
Indian Territory Illuminating Company	2,584,077	$2,317,795	3,036,487	$3,381,855	3,388,611	$4,630,546
Magnolia Petroleum Company	2,437,440	1,926,902	2,401,790	2,360,799	2,634,156	3,259,285
Sinclair Oil & Gas Company	2,356,080	2,071,459	2,749,093	3,127,999	3,462,849	4,725,368
Prairie Oil & Gas Company	2,136,634	1,938,502	2,300,396	2,593,673	2,569,573	3,514,131
Gypsy Oil Company	1,720,683	1,591,422	1,832,703	2,074,510	1,927,086	2,614,214
Carter Oil Company	1,645,418	1,418,159	1,811,992	1,926,218	2,106,297	2,716,306
Phillips Petroleum Company	1,364,254	1,168,567	859,812	949,536	.....	.....
Mid-Continent Petroleum Corporation	1,317,994	1,157,985	1,476,481	1,612,196	1,599,992	2,128,996
Slick-Urschel, Inc.	1,186,270	975,683	.....	.....	.....	.....
The Texas Company	852,106	733,605	841,846	896,201	983,938	1,285,332
Total	16,952,956	$15,300,079				
*Total all companies	43,862,350	.....	60,151,200	.....	52,630,200	.....

*A.P.I. Estimates.

Name and Address—	Barrels	Amount
Home Gas Co. of Cushing, Cushing	9,266	13,695
Elizabeth Crockett Hayes, Okla. City	.....	5,893
S. W. Hayes, Okla. City	.....	13,260
J. E. Hascock, Blackwell	.....	8,992
Frank Haskell, agent, Tulsa	8,945	6,211
T. J. Hughes Oil Corp., Cushing	.....	6,660
Hilton-Phillips, Inc., Shawnee	.....	23,854
Hales-Mabee-Roberts, Inc., Tulsa	43,771	42,262
Heenan-Coe-Cook & Cunningham	.....	3,002
Paid by First National Bank, Okla. City.		
Indian Territory Illuminating Co., Bartlesville	2,584,077	2,317,795
Indian Royalty Co., Okla. City	13,427	12,877
Indian Oil and Gas Co., Tulsa	22,345	18,824
Iron Mountain Oil Co., Tulsa	8,481	†8,863
E. W. & F. D. Jones Drilling Co., Okla. City	.....	8,384
Johnson Oil Refg. Co., Chicago, Ill.	21,891	15,394
R. C. Jones and Co., Inc., Cushing	.....	5,465
L. B. Jackson, Sapulpa	.....	5,953
Jackson, Wise and Bovaird, Sapulpa	1,913	1,169
Jackson and Wise, Sapulpa	4,260	4,280
Jackson Wise and Markham, Sapulpa	.....	1,218
L. B. Jackson, Sapulpa	1,530	1,327
L. B. Jackson, Sapulpa	5,286	4,024
J. Edw. Jones, paid by American Nat'l Assoc. Trustee, N. Y. City	.....	2,737
Kay and Kiowa Oil Co., Tulsa	3,667	3,251
Kreola-Colcord and Commerce, Ardmore	9,141	6,089
Kreola Oil Co., Ardmore	.....	2,500
Kingwood Oil Co., Okmulgee	21,036	19,249
Keener Oil and Gas Co., Tulsa	28,514	21,381
Kewanee Oil and Gas Co., Titusville, Pa.	139,377	†130,932
Kednurg Oil Co., Okla. City	10,366	9,444
Frank L. Ketch, trustee for Wirt Franklin, Oklahoma City	21,367	19,466
Kay Oil Co., Blackwell	11,301	10,897
Chas. E. Knox, Enid	11,092	†9,565
Louisiana Oil and Refg. Corp., Shreveport, La.	50,236	33,156
Lima Oil and Gas, Bartlesville	15,397	14,437
Laurel Oil and Gas, Philadelphia, Pa.	44,005	38,654
Link Oil Co., Tulsa	20,783	17,825
Little Nick Oil Co., Chickasha	.....	20,264
B. A. & T. E. Lasalle, Ada	.....	25,368
LeFlore County Gas & Elec. Co., Poteau	.....	5,996
Mary B. McAlester (year 1930), McAlester	.....	24,648
A. G. MacDonald, trustee, Okla. City	.....	26,051
Magnolia Petr. Corp., Dallas, Tex.	2,437,440	1,926,902
Magnolia Petr. Corp., (suspense), Dallas, Tex.	8,473	6,972
Magnolia Petr. Corp., paid under protest, Dallas, Tex	5,115	4,675
Magnolia Petr. Corp., paid under protest, Dallas, Tex	1,715	1,226
Magnolia Petr. Corp., paid under protest, Dalas, Tex.	2,901	†2,872
Magnolia Petr. Corp., paid under protest, Dallas, Tex	35,807	32,731
Mid Cont. Petr. Corp., Tulsa	1,317,994	1,157,985
Minnehoma Oil and Gas, Tulsa	153,165	133,708
Murphy Oil Co. of Penn., Phil. Pa.	8,969	7,102
Mul-Berry Oil Co., Cushing	.....	66,199
Mullendore Trust Co., Cleveland	.....	17,576
Margay Oil Corp., Tulsa	38,711	33,146
Midco Oil Corp., Tulsa	16,052	14,416
Mudge Oil Co., Pittsburgh, Pa.	16,175	8,595
F. W. Merrick, Inc., Ardmore	.....	24,879
Ward S. Merrick, Ardmore	.....	3,354
J. H. Markham, Jr., Tulsa	15,924	13,766
D. B. Mason, Tulsa	11,040	9,904
Clint Moore, est., Tulsa	10,229	8,715
Mabee Petr. Co., Tulsa	8,061	8,142
J. E. Mabee Prod. Co., Tulsa	153,439	151,060
H. Mabee-Hales-Roberts, Inc., Tulsa	43,771	42,262
Mid Kansas Oil and Gas, Findlay, Ohio	600,420	530,290
National Refg. Co., Cleveland, Ohio	11,965	10,708
Noble-Olson Drilling Co., Tulsa	16,176	11,452
Noble-Olson Drilling Co., Tulsa	801	477
Norwood Oil Co., Tulsa	6,610	5,066
W. C. Norris, Tulsa	.....	5,089
"Nichey" lease, by Supt. 5 Civilized Tribes	.....	2,595
Oils Incorporated, Okla. City	56,225	37,194
Ona Oil Co., Blackwell	.....	10,151
Olean Petr. Co., Bristow	7,250	6,791
Osage Gas Producing Co., Indep. Kans.	447	344
Operators Oil Co., (suspense), Tulsa	17,169	10,461
Operators Oil Co., (suspense), Tulsa	3,390	2,204
Okla. Public Serv. Corp., Cedar Rapids, Iowa	3,800	1,873
The Oklahoma Company, Tulsa	55,530	50,260
Helen B; Russell B; Horace B. Olds, Chas. City, Iowa	5,454	4,727
W. B. Osborn, D. F. & John J. Fleet, Ada	.....	5,468
W. B. Osborn, D. F. & John J. Fleet, Ada	.....	3,788
Prairie Oil and Gas Co., Indep. Kans.	2,136,634	1,938,502
Prairie Oil and Gas Co., trustee, Indep. Kans.	2,536	2,035
Phillips Petr. Co., Bartlesville	1,364,254	1,168,567
Phillips Petr. Co., for partners, Bartlesville	82,697	68,806
Phillips Petr. Co., for partners, Bartlesville	.....	3,036
W. G. Phillips and J. B. Milam, Chelsea	39,879	39,868
W. G. Phillips and J. B. Milam, Chelsea	965	1,002
Pure Oil Co., Chicago, Ill.	747,126	663,753
Pure Oil Co., Chicago, Ill.	.....	1,510
Producers Oil Co., Tulsa	42,202	39,705
Producers and Refiners Corp., Indep. Kans.	143,035	104,153
Paragon Oil Co., Tulsa	4,769	3,982
Phoenix Oil Co., Pittsburgh, Pa.	8,521	7,877
Plymouth Petr. Co., et al, Tulsa	6,797	5,561
Petroleum Royalties Co. of Okla., Tulsa	.....	49,832
Public Service Co. of Okla., McAlester	.....	9,052
The Petroleum Co., Tulsa	3,931	3,275
The Petroleum Co. & M. H. Mosier, Tulsa	11,243	9,253
Paraffine Oil Co., Houston, Texas	6,445	4,783
Plains Petr. Co. Inc., Tulsa	5,298	†4928
Plains Petr. Corp., Okla. City	21,978	19,014
Privett Drilling Co., Maramac	4,250	5,054
Pouder and Pomeroy Co., Tulsa	24,774	23,648
Panther Oil and Gas, Okla. City	5,690	5,086
Penn-Ohio Gas Co., Pittsburgh, Pa.	6,116	5,546
Papoose Oil Co., Tulsa	34,247	†32,989
W. B. Pine, Okmulgee	47,199	1,671
W. B. Pine, Okmulgee	1,615	2,364
W. B. Pine, Okmulgee	75,985	60,715
W. B. Pine & Phillips Petr. Corp.	1,670	1,437
Pyramid Oil Co. & Rex Oil and Gas, Winchester, Ky.	9,263	7,117
Penn-Ohio Gas Co., Pittsburgh, Pa.	6,116	5,546
Petroleum Royalty Corp., Tulsa	8,585	8,349
Pioneer Petr. Co., Tulsa	7,874	5,872
Phillips & Milam, Chelsea	27,336	21,238
Frank Russell, by Slick Oil Co.	.....	2,103
J. M. Russell, by Slick Oil Co.	.....	2,103
Ramsey Petr. Corp., Okla. City	63,064	†43,397
Reiter-Foster Oil Corp., Tulsa	13,460	12,160
Red Bank Oil Co., Tulsa	28,034	23,071
R. H. Robertson, Nowata	5,929	4,980
Robertson, Glass and Harmon, Nowata	3,293	2,578
Reliance Oil Co. of Okla., Houston, Texas	3,923	4,470
Reliance Oil Co. of Houston, Houston, Texas	3,605	2,663
Riverland Co., Tulsa	6,020	5,830
Regal Oil and Gas, Tulsa	15,868	14,211
Reserve Petr. Co., Tulsa	15,507	12,983
Rockland Oil Co., Ardmore	22,271	15,030
Rena Royalty Co., Tulsa	2,132	2,051
D. A. Richardson, Okla. City	12,952	12,268
H. E. Rapp, Okla. City	.....	16,515
Reynolds and Unruh, Wichita Kansas	.....	46,693
Jake Rutz Oil Co., Morris	7,010	5,302
E. L. Robinson and Gibson and Zahniser	3,899	†4,247
E. L. Robinson, Tulsa	7,607	5,908
Shell Petr. Corp., St. Louis, Mo.	678,473	598,682
C. B. Shaffer, Chicago, Ill.	11,289	8,352
J. C. Shaffer, Inc., Okla. City	.....	12,123
Silurian Oil Co., St. Louis, Mo.	93,660	66,362
Selby Oil and Gas, Tulsa	20,523	15,728
J. L. Selby, Muskogee	6,508	5,482
Stanolind Oil and Gas Co., Tulsa	426,463	†405,729
Stanolind Oil and Gas Co., Tulsa	.....	30,695
Superior Oil Corp., Tulsa	111,190	94,250
Skelly Oil Co., Tulsa	670,650	588,275
Sunray Oil Co., Tulsa	365,969	236,807
Sunray Oil Co., Tulsa	9,218	7,463
Sands Petr. Corp., Tulsa	7,275	5,740
Shasta Oil Co., Wichita Falls, Texas	54,114	39,028
Sinclair Oil and Gas Co., Tulsa	2,356,080	2,071,459
Sinclair Oil and Gas Co., (suspense), Tulsa	.....	183,779
Southern Oil Corp., Winfield, Kans.	7,212	6,058
Simpson-Fell Oil Co., Ardmore	10,400	8,582
Simpson-Fell Oil Co., Ardmore	3,194	2,096
Will H. Smith, Ardmore	.....	30,540
Simms Oil Co., Dallas, Texas	43,661	39,694
Sheridan Oil Co., Tulsa	7,457	5,748
Shoreline Oil and Gas, Tulsa	11,701	9,371
Standard Royalties of Canada, Inc., Toronto, Canada	.....	43,556
Sturm Drilling Co., Ardmore	6,987	†5,721
Slab Oil Co., Ardmore	7,145	7,219
E. S. Stahl and Stahl Petr. Corp., Tulsa	.....	16,346
G. J. Smith, Tulsa	.....	29,125
S. W. Gas Utilities Corp. of Okla. Ada	.....	5,019
Harry Stekoll, Tulsa	21,032	20,523
Snowden and McSweeney Co., N. Y. City	.....	22,401
Sterling Trusts Corp., Receivers, Toronto, Canada	.....	3,678
Geo. W. Snedden, Tulsa	32,239	31,642
M. B. Shufflin, Coffeyville, Kansas	7,877	6,382
O. D. Steen, dec., Okla. City	.....	2,625
Schermerhorn-Young Co., Tulsa	.....	988
Schermerhorn Oil Co., Tulsa	2,418	†6559
Schermerhorn-Ardmore Co., Tulsa	58,294	†42,862
Tom Slick Properties, Inc., Okla. City	92,724	84,303
Estate of Thos. B. Slick, dec.	76,706	78,906
Slick-Urschel, Inc., Okla. City	1,063,028	953,059
Slick-Urschel, Inc., Okla. City	23,242	22,624
Slick Oil Co. for Western Paving Co.	11,956	19,654
Est. T. B. Slick for Wm. H. Atkinson, Okla. City	.....	4,070
Est. T. B. Slick for H. W. Priest, Okla. City	.....	1,432
Est. T. B. Slick for Ollie Black, Okla. City	.....	1,432
Est. T. B. Slick for Frank Russell, Okla. City	.....	2,103
Est. T. B. Slick for J. M. Russell, Okla. City	.....	2,103
Texas Co. Prod. Dept., Tulsa	852,106	733,605
Turman Oil Co., Tulsa	114,899	99,751
Tidal Oil Co., Tulsa	391,125	309,914
Texas Pacific Coal and Oil Co., Thurber, Texas	38,973	†23,168
Treveyn Oil Co., Duncan	.....	25,797
Twin States Oil Co., Tulsa	350,869	209,610
Traders Compress Co., Fort Worth, Texas	.....	46,834
Thlocco Oil Co., Tulsa	9,051	8,979
H. E. Turner, Okla. City	12,159	11,717
Trosper Park Royalty Owners, by First National Bank, Okla. City	.....	7,963
Vacuum Oil Co., Houston, Texas	81,747	80,876
Valley Osage Oil Co., Tulsa	13,666	10,905
Venmex Oil Co., Wichita Falls, Texas	22,446	17,118
Mary E. Vance, Tulsa	1,741	2,034
H. F. Wilcox Oil and Gas, Tulsa	174,690	155,465
H. F. Wilcox Oil and Gas, (production suspense), Tulsa	18,547	9,767
L. H. Wentz Oil Division, Ponca	113,304	†108,627
Wentz Oil Corp., Ponca	651	589
Westheimer and Daube, Ardmore	84,947	67,279
Winona Oil Co. of Delaware, Tulsa	22,405	18,097
Westland Oil Corp., Tulsa	13,875	12,643
Western Paving Co., by Slick estate, Okla. City	22,956	19,654
E. A. Walker, Okla. City	.....	7,669
Wolverine Petr. Corp., St. Louis, Mo.	150,388	116,654
Warner-Caldwell Oil Co., Titusville, Pa.	27,249	21,263
Wrightsmith Oil Co., Ardmore	20,138	18,014
Wiser Oil Co., Sisterville, W. Va.	44,695	34,321
Howard J. Whitehill, Tulsa	3,956	3,174
Whitehill Oil Corp., Tulsa	17,539	14,374
Howard J. Whitehill and H. C. Weible, Tulsa	11,600	9,407
Howard J. Whitehill for others, Tulsa	.....	7,219
Wood Oil Co., Tulsa	.....	8,126
Westoak Gasoline Co., Sayre	5,169	6,769
Winkler and McQueen, Duncan	4,978	4,335
Winkler and McQueen, Duncan	.....	1,236
J. H. Wright, est., Sapulpa	15,473	13,265
John W. Willmott, San Diego, Cal.	.....	9,900
L. W. Zimmerman, Chicago, Ill.	16,753	10,459

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Note correction of last advertisement due to transposed lines.

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New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

▼ ▼ ▼

Power Units

HERCULES MOTORS CORPORATION

Hercules Motors Corporation, Canton, Ohio, has developed an additional line of power units built around the heavy duty "HX" Series of six-cylinder engines. The "HX" Power Units are built in five sizes: the HXA, 4¾ x 6-inch, displacement 638 cubic inches; the HXB, 5 x 6-inch, displacement 707 cubic inches, and the HXC, 5¾ x 6-inch, displacement 779 cubic inches; the HXD, 5½ x 6-inch, displacement 855 cubic inches; and the HXE, 5¾ x 6-inch, displacement 935 cubic inches.

All the "HX" Power Units in the standard assembly include a radiator of ample proportions to insure proper cooling, a clutch power take-off, and all necessary engine accessories. A control box located on the opposite end from the radiator provides for convenient regulation of carburetor and magneto. The radiator frame is strongly braced, making the whole assembly very rigid.

While designed to operate on gasoline, the "HX" Power Units Series can be arranged for operation on natural gas or kerosene. Reduction gears are also available as optional equipment.

Toothless Chain Tong

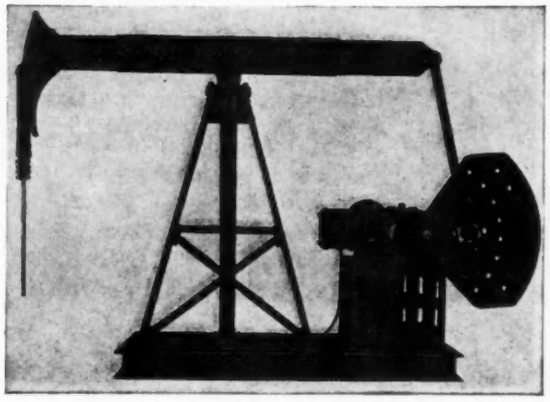
GEARENCH MANUFACTURING COMPANY

Gearench Manufacturing Company, Hughes Street, Houston, Texas, announces production and deliveries on its new Petol Friction Tong, a chain tong which has no bits or teeth. A flexible, rocking joint between head and handle, and a full-wrap friction chain hold enables this tong to make up and break out, without damage, pipe coated with lead, zinc, galvanized or other coating. Turning action is by friction only.

The Petol Friction Tong is easily applied or removed, ratchets freely on any surface, and never slips. Owing to its construction, it can not jam or bind. A slight lift on the handle releases the chain instantly. Design of the tongs makes them light, strong, rigid and durable. Jaw member is one piece and can not loosen or spread. Chain hooking slot is integral with the jaw, eliminating distortion and preserving the chain. Extra large pivot bolts are used for attaching jaw to handle. Tongs are made of the highest quality nickel-chrome steel, hardened and tempered. Each size tong has the most convenient length handle for the particular size pipe to be turned.

Petol Friction Tongs are made in 1-inch, 1¼-inch, 1½-inch, 2-inch, 2½-inch, 3-inch, 4-inch, 6-inch and 8-inch sizes. An illustration descriptive folder will be mailed on application to Gearench Manufacturing Company, 313-323 Hughes Street, Houston, Texas.

New Gearench Toothless Chain Tong



Nuttall-Westinghouse Power Hook-up

Pumping Power Unit

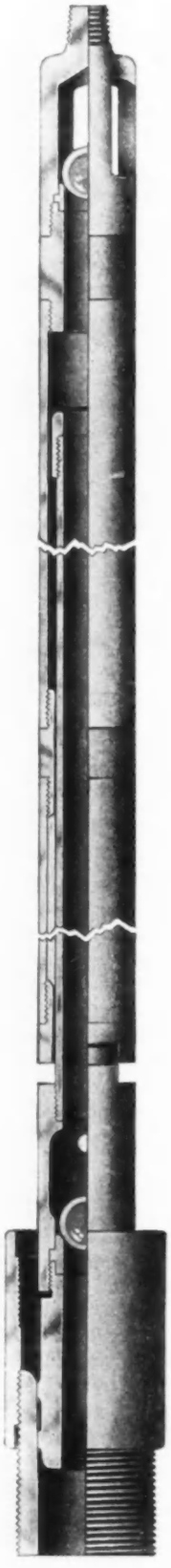
WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

The Nuttall Works of the Westinghouse Electric and Manufacturing Company and Oil Well Supply Company announce new pumping powers, OP-300, embodying several advancements in design and construction of oil well production equipment.

They have the entire drive, reduction gears, motor and control combined into a single compact unit of weather-proof construction, to eliminate the necessity for any shelter house. This unit drive assembly requires only one foundation and once in place there remains only the connection of three wires between the control and the power supply. All other wiring is done during manufacture.

The high torque squirrel cage type a-c. motor is reduced to the rotor and primary core with coils. It has no separate frame, no feet, shaft, brackets, nor bearings. The primary winding is pressed into a housing securely bolted to the upper section of the gear case. Tack welds are to prevent the core from turning in this housing. The rotor is lightly pressed and keyed onto an overhung extension of the high speed gear shaft.

The control is assembled on a panel mounted in a weather-proof compartment cast integral with the upper section of the gear case. The control is operated from the exterior of the case by means of two push buttons ("Start" and "Stop") arranged in a small compartment with a cover which may be locked to prevent tampering by unauthorized persons. The control may be set either to re-start auto-



Hopper Insert Pump

matically after a power failure or to remain shut down until manually re-started by the pumper.

The triple reduction gear unit has heat-treated helical gearing in the first and second reductions assuring a commercially quiet unit.

A positive splash system lubricates constantly all gears, shafts and bearings.

The small sized gears in the first reduction are keyed on overhung tapered shafts. This set of gears is in a separate compartment and constitutes the "change-gears," a distinctive patented feature by which the number of pumping strokes can be varied readily by merely substituting gears of different ratios.

Further variations in the number of strokes are obtained by using motors of different speeds which the housing on each size of unit is designed to accommodate.

The walking beam, pitman, Sampson post and base of the pumping powers are of all-steel construction.

A new type adjustable rotating counterbalance crank is of unique design. It contains two rows of pockets into which removable lead slugs can be arranged to give the desired counterbalancing effect for either leading or lagging the load. A cover plate bolted over those pockets holds the slugs in place when the crank is rotating.

The new OP-300 unit pumping powers are built in three sizes, having capacities up to 40 horsepower and a range of pumping speeds of 10 to 32 strokes a minute with strokes varying in length from 24 to 72 inches.

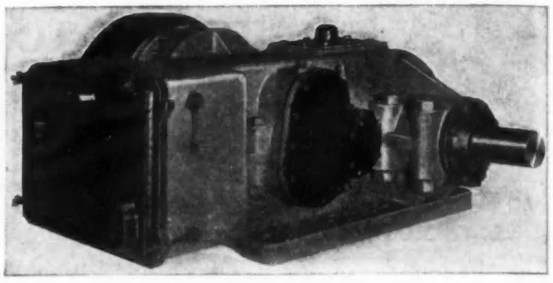
Oil Well Supply Company, through its branch stores, is sole distributor of these new pumping powers.

Insert Pump

HOPPER MACHINE WORKS

Hopper Machine Works, Inc., Bakersfield, California, announces an insert pump with a ground liner and plunger. This pump is designed especially for small producing wells of 200 barrels per day or less and is especially suitable for wells making sand or other abrasive deposits with the oil. The construction with precision ground plunger and liner offers less pulling for replacement. Being of the insert type it is removed with the rods and does not require the pulling of tubing.

The pump has the marked feature of a plunger six feet long, ground its entire length and working with a cast iron liner ground to ten-thousandths of an inch. This permits the pumping of oil containing considerable sand and foreign matter with an insert pump. The liners are



Enclosed Power Unit, Nuttall-Westinghouse Pumping Power

bored to the largest possible size in new pumps to give the plunger several regrinds. The liners used with these smaller plungers are then reground to the larger or new plungers.

Two sizes are available at the present; two half-inch and three-inch. The stroke is 48 inches. The balls and seats are particularly selected and all cages and fittings are made according to A. P. I. standards. The emilination of pulling tubing to change the pump with a resulting cut in the time off production; longer periods between changes; and no cups or packing are leading features. Other details will be gladly furnished by the manufacturer.

Tape Rule

LUFKIN RULE COMPANY

Lufkin Rule Company, Saginaw, Michigan, announces the new Crescent tape-rule, a combination tape and rule, which offers a number of new, useful and novel features. It is a six-foot measure, combining in a unique way the convenience of a pocket tape and the utility of a rule.

It is an accurate steel tape that automatically winds into a case two inches in diameter. Crescent No. 696 marks inches in sixteenths. No. 696D is marked feet, tenths and hundredths of feet, engineers measure.

Lufkin Tape Rule

The line or rule blade is of tempered steel, stiffened by special forming. It is nickel plated and has prominent dark markings. Unsupported, it may be projected like a rule. It also measures circular, round-cornered and other shaped objects. Measurement is taken when the outer end is projected against any object, and the solid clip at the first end serves for withdrawing the rule blade from the case and also as a hook for taking measurements out of arm reach.

The Lufkin Crescent tape-rule is marketed through hardware and tool stores, engineering supply and factory supply houses.

When Packings Answer the "Cost-Test"

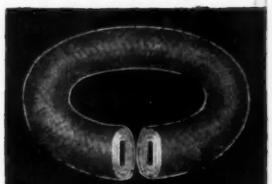
METRIC *Service Records Show Low Cost . . . Long-Lasting Efficiency*

To give economical, efficient performance, a packing must satisfy two basic requirements. First, it must be sturdily built of quality materials. Secondly, its construction must match the specific job to which it is applied.

Hewitt-Gutta Percha Metric Packings meet both these requirements—with an ample margin of service left over. No wonder Metric bucks overloads so effectively and gives extra days of wear!

Behind every Metric Packing stands 70 years of mechanical rubber goods experience—your assurance of uniformity, correctness of design and high quality. Put your packings on a "cost-test" basis and let Metric *prove* its savings.

Product of
HEWITT-GUTTA PERCHA RUBBER CORP.
Mechanical Rubber Goods for Every Industry



STYLE No. 55 RING

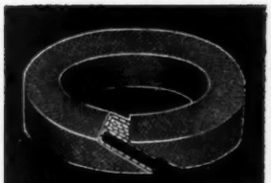
Asbestos-Metallic—made with high grade resilient core, covered by plurality of braids of long fibred asbestos yarn. Copper braid covering. Very durable steam packing.

STYLE No. 111 SECTIONAL

Very high grade duck and friction, tightly stitched with linen thread. For low pressures; on rods worn or out of true. Can be used against hot oil.

STYLE No. 65 SPIRAL

Expansion packing—self-adjusting. For outside packed plungers against steam, air, water.



STYLE No. 11 SPIRAL

High quality construction for high pressure, super heat conditions. For steam, air and gas rods; any pressure; all speeds.

STYLE No. 300 RING

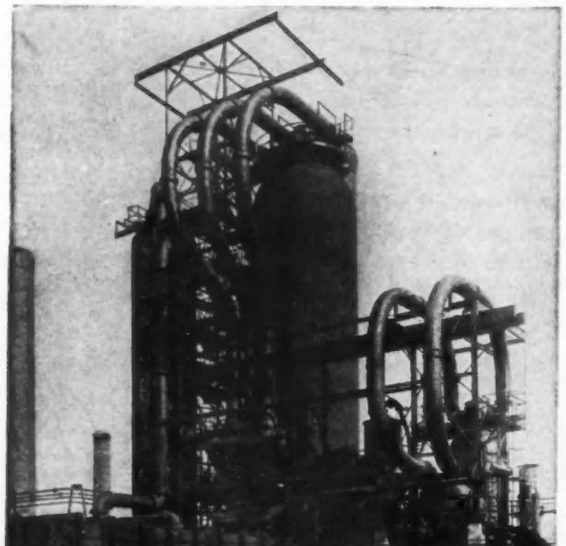
Semi-metallic. Made on sliding wedge principle with rubber cushion. For large rods, outside packed plungers, metal wearing surface. Makes perfect seal.

***Oil Field Distributors* . . OIL WELL SUPPLY CO.**

Metric Packings are giving long-time service in this slush pump on a busy producing field.

GULF

Modern Methods Make Modern Gulf Products



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Wax · Petroleum Coke

Cylinder · Engine · Cordage

GULF REFINING COMPANY

General Sales Offices: PITTSBURGH, PA.

Manufacturer and Supply Dealer Notes

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Gearench Manufacturing Company, 313-23 Hughes Street, Houston, announces the appointment of G. D. Hall, 1506 Santa Fe Avenue, Los Angeles, as California factory representative. Hall was for 11 years a field salesman for Guiberson Corporation. The announcement further names the appointment of W. L. Martin, 1739 South Yorktown Street, Tulsa, as Oklahoma factory representative. Martin formerly served W-K-M Company as field salesman. These announcements by C. E. Olsen, president of the company, follows completion of field tests on the last of the line of wrenches which gives to the producing, refining and pipe line branches of the industry a type wrench for every job.

Economy Pump & Oil Tool Company of Los Angeles, through Charles F. Strover, sales manager, announces that the company will open its own branch office in Taft, California, to better serve the Taft and Kettleman Hills region. A complete service organization will be maintained in connection with this branch store, which will be located at 230 Center Street, under the management of H. G. Munkhoff. This store will also serve as the headquarters for John H. Doane, district manager for the company in the Taft territory.

W. C. Norris of Tulsa announces the opening of a warehouse in Kilgore to serve the East Texas fields. A complete stock is to be carried and is being installed as rapidly as possible. J. W. Emery, formerly of Fort Worth, is to be in charge of the Kilgore warehouse.

Oil and Petroleum Year Book

The "Oil & Petroleum Year Book" for 1931 by Walter E. Skinner, just issued, is the 22nd annual issue. Published annually in May and covering all branches of the oil industry, the book is recognized as the standard international reference work on oil and allied companies operating in all parts of the world. The possession of a reliable and up-to-date reference book has become a necessity as it records the many alterations in the personnel and financial structure of British and foreign companies.

Covering 450 pages it contains particulars of 620 English and foreign companies—producers, refiners, dealers, carriers—pipe and steamship—and oil finance companies operating in all parts of the world, including the principal American and foreign companies. Lists are also given of the officials connected with the companies and comprise 2250 directors, 325 secretaries and 185 consulting engineers, managers, agents, etc., their names and addresses and company connections. A useful feature is the list of 398 trade names of the petroleum products marketed by the various companies.

The particulars of each company include the directors and other officials, date established, location of property, purchase consideration, number of wells sunk, oil production, and description of work in progress, capacity of refineries, capital, calls, dividends and financial position as disclosed by latest accounts, also highest and lowest prices of the shares for the last three years and latest price.

The book is published by Walter E. Skinner, 15 Dowgate Hill, Cannon Street, London, E. C. 4. Copies may be secured through Gulf Publishing Company, Box 1307, Houston, Texas. of California."

American Askania Corporation announces the opening of an office at 1603 South Michigan Avenue, Chicago. In addition to Askania industrial equipment, including all kinds of regulators for controlling plant conditions, the company will also handle Askania geophysical instruments and apparatus, as well as the various other instruments of Askania make. The Company's Houston office, 622 Marine Bank Building, will continue to be maintained, selling and servicing Askania geophysical equipment. George Stubbe, president of the company, opened and is now located in the Chicago office.

Chicago Pneumatic Tool Company, 6 East 44th Street, New York City, through President H. A. Jackson, announces the election as executive vice president W. L. Lewis, who for the past year has been vice president in charge of finance of this company and who was formerly assistant comptroller of Bethlehem Steel Corporation.

Export Dinner

Los Angeles.—The first "Promotion Dinner" of the Oil Equipment Export Association was held at the Alexandria Hotel in Los Angeles on May 21, 1931. Preceding an address by Clarence T. Matson of the Los Angeles Chamber of Commerce on "Developing Exports for Manufacturers of California,"

Several representatives from foreign countries and others who had just returned from trips to different parts of the world were asked to give the meeting any information that would assist in bettering foreign trade. C. A. McLelleand of Reed Roller Bit Company cautioned against sending old equipment to foreign fields. He advised that there are good shops in nearly all the countries and that all necessary repairs can be made there. He advised that there are plenty of fields for equipment to be used but the business has to be gone after. In reply to a question, Mr. McLelleand said it would cost from $12,000 to $15,000 to send a representative around the world.

R. N. Scott of Burmah Oil Company said that they are using lots of old equipment in Burmah at present but that he hoped they would be in the market for new equipment soon. Paul Youngling reminded the meeting that the future of the American oil equipment export business would depend on maintaining our position in the front in manufacturing, developing and inventing of new equipment. We will continue to export only so long as we keep ahead of others. Messrs. Hoffman, van Zwyndrecht, Stevens, Czernaiwsky, from the Dutch East Indies, expressed their appreciation of the tools and machinery shown to them and explained the objects of their visit to the United States. Mr. Van Zwyndrecht suggested that every part of the tool be marked and its construction and material be given to assist in its repair.

John R. Webb of Oil Well Supply Company advised that some equipment must be sent out on trial and then must be followed up if more orders were desired. He advised the manufacturers to keep putting out new tools. Mr. Sutter said that he felt proper service in foreign fields is a serious problem. His company is considering sending a man to represent it with a group of other manufacturers.

Squeaks From the Bull Wheel

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A motorist rattled into a New York garage in a very old, cheap car, and inquired what the rates were.

"I'll have to ask you a five spot," said the garage owner. "In advance," he added.

"My gosh," exclaimed the motorist. "A five spot in advance? But I'll come for the car in the morning."

"Ah," said the garage man, "that's just it. Will you come.?"

Tourist—Is it an offense to park on Main Street in this town?

Native—No, sir; by gum, if you kin park on Main Street here, it's a miracle.

"We shall reside at the old manse," said the bride.

And the reporter wrote:

"When they return from their honeymoon, the newlyweds will live with the bride's father."

I am very glad to see you coming to church regularly, Mrs. Black.

Oh, yes, sir. I'll be coming often now, sir. I does it to spite me old man. He hates me going to church.

A stranger applied at the police station for a lodging, and when asked his name, replied that it was Smith.

"Give me your real name," he was commanded by the custodian of the records.

"Well," replied the applicant, "put me down as William Shakespeare."

"That's better," the officer told him. "You can't bluff me with that 'Smith' stuff."

Visitor in County Jail—What terrible crime has this man committed?

Warden — He didn't commit any crime at all. He was going down the street a few days ago, and saw one man shoot another, and he is held as a material witness.

Visitor—And where is the man who committed the murder?

Warden—Oh, he's out on bail.

"No doubt you will allow me to take my laundry with me," said the haughty lodger who had been rather delinquent in his payments.

"Certainly," replied the landlady. "Your other collar is downstairs."

"Had wonderful luck on our run yesterday," said the man with a patch over his eye. "Wonderful luck."

"In what way?"

"The machine smashed up right in front of a doctor's office."

A caller asked his hostess why a beautiful urn in the living room was always covered up.

"Oh, it contains my husband's ashes," was the response.

"Oh," replied the guest, "but I had no idea you were a widow."

"I'm not. My husband is just too stingy to buy ashtrays."

The scene is a dress rehearsal of Noah's Ark. Hundreds of people and animals are running about. But above all the confusion can be heard the shrieks of the electrician: "What lights shall I use? What lights shall I use?" And the heavens open and a voice comes to him: "The flood lights, you sap."

Kiwanis—Who made the best speech at the banquet last night?

Lion—Some dub at the foot of the table. He said he was tired and wanted to go to bed.

Steno (just learning golf): Say, that game of golf is surely good exercise. Just feel my muscle.

Office Wag (feeling her biceps appraisingly): You certainly have got a lot of muscle. By the way you do a lot of walking in that game, don't you?

Steno: Ah! You men are never satisfied.

"I have just heard an awful story about Mrs. Jones."

"I thought you had. You look so happy."

"Old Mr. and Mrs. Hardscrabble are going to celebrate their golden wedding anniversary next week."

"That's fine. What are they going to do?"

"Burn the mortgage on their home, I understand."

A man touring Europe sent back a picture postcard bearing this message:

"Dear Son:

"On the other side you will see a picture of the rock from which the Spartans used to throw their defective children. Wish you were here.

"Dad."

She—What an elegant overcoat you have. But I can't understand why you wear such shabby trousers.

He—I never take off my trousers in the restaurant.

DRILLER SHOWS OLD TIMER

NEW TRICKS

with an

APPLEMAN

Fireman (Old-Time Driller): "You boys better go in that hole with a rock bit, 'cause if ya don't yuh gonner have another fishin' job."

Driller: "What's th' matter with you, old timer?"

Fireman (O. T. D.): "No ord'nary bit's gonna go into that chalk."

Driller: "Didja ever use an **APPLEMAN?**"

Fireman (O. T. D.): "Naw! Why?"

Driller: "Well, wait'll I get in this hole with an **APPLEMAN,** an' I'll show you some ***new tricks!***"

B.K. APPLEMAN

BEAUMONT, TEXAS

BAROID

Extra-Heavy Colloidal Drilling Mud

BAROID is a uniform, high-grade specially prepared pulverized weight material for increasing the weight of Drilling Mud to over-come high gas and water pressures. It is packed in 100-lb. sacks and carried in stock in all oil fields.

BAROID has a specific gravity of 4.2 and enables the preparation of very thin muds weighing 120 lbs. to the cubic foot (16 lbs. per gallon). Special BAROID can be obtained to make heavier muds if necessary.

BAROID can be added to your regular Drilling Mud to increase its weight, or can be mixed with water to prepare extremely heavy thin muds. Drilling Muds made up from BAROID will positively not settle out of the hole, eliminating danger of stuck pipe and preventing fishing jobs. BAROID is non-abrasive, inert and does not gas-cut. For further information write for free copy of BAROID Bulletin.

USED IN THE WORLD'S DEEPEST WELL

AQUAGEL helped drill the world's deepest well—C. C. M. O. Hobson A-2 now down more than 10,000 feet.

AQUAGEL

Trouble-Proof Colloidal Drilling Mud

AQUAGEL is a uniform, high-grade specially treated pulverized clay, packed in 100-lb. sacks and carried in stock in all principal oil fields. Mixed with water in the proportion of 3% by weight, one ton of Aquagel makes 180 bbls. of extraordinary Drilling Mud for use where high pressures are not encountered — or added to your regular Drilling Mud in small quantities it will impart extraordinary characteristics to the mud. AQUAGEL will: Prevent caving, prevent stuck drill pipe and casing; prevent loss of circulation; prevent mudding off of producing sand and prevent gas-cutting. It will keep all solids in the mud from settling out in the hole and will speed drilling by lubricating the drill pipe and walls of the hole. In cable tool holes all casing may be recovered if AQUAGEL-water fluid is used prior to setting each string. For further information write for free copy of our Mud Handbook.

LEMCO MUD SCREEN

BAROID SALES COMPANY is now exclusive domestic and foreign sales agent for the LEMCO Rotary Mud Screen. These screens are stocked and distributed in California by the Republic Supply Company of California and in the Mid-Continent and Gulf Coast by Bridgeport Machine Company and Lucey Products Corporation.

Perfect removal of sand and cuttings from your mud is assured by the Lemco Screen which is the *only* screen especially designed for this important work. Savings made more than repay its cost. Write for complete information.

MARTIN-DECKER AUTOMATIC MUD SCALES

BAROID SALES COMPANY is now sales agent in the Mid-Continent and representative in California for the new Martin-Decker Automatic Mud Scales. This new trouble-proof device continuously indicates and records the weight of your mud and is a great improvement over mud-weighing methods formerly in use. Complete information on request.

BAROID SALES COMPANY

837 JACKSON STREET

LOS ANGELES CALIFORNIA, U. S. A.

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Please put me on your mailing list to receive FREE copy of your monthly publication "Drilling Mud." Send to:

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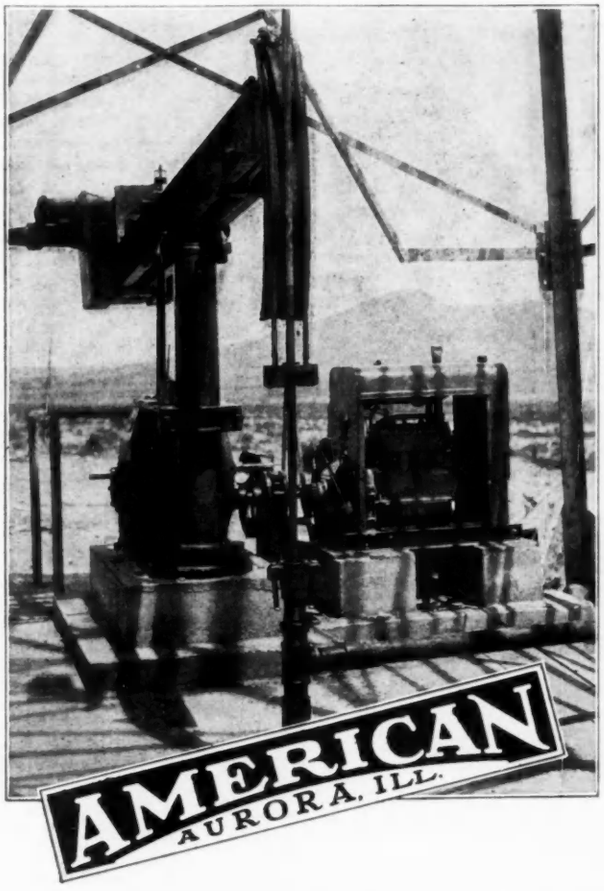
AN "AMERICAN" WITH GAS ENGINE



Pictured is an "American" No. 4-A Fig. 1822 oil well pumping unit direct connected to a gasoline engine.

"American" units have been particularly designed to meet the various drive requirements of different localities. "American" units are adaptable for pulley, V-belt or direct drive by gasoline engine or electric motor.

Detailed figures and engineering data of typical installations of this equipment in both this country and others are available. Ask for them!

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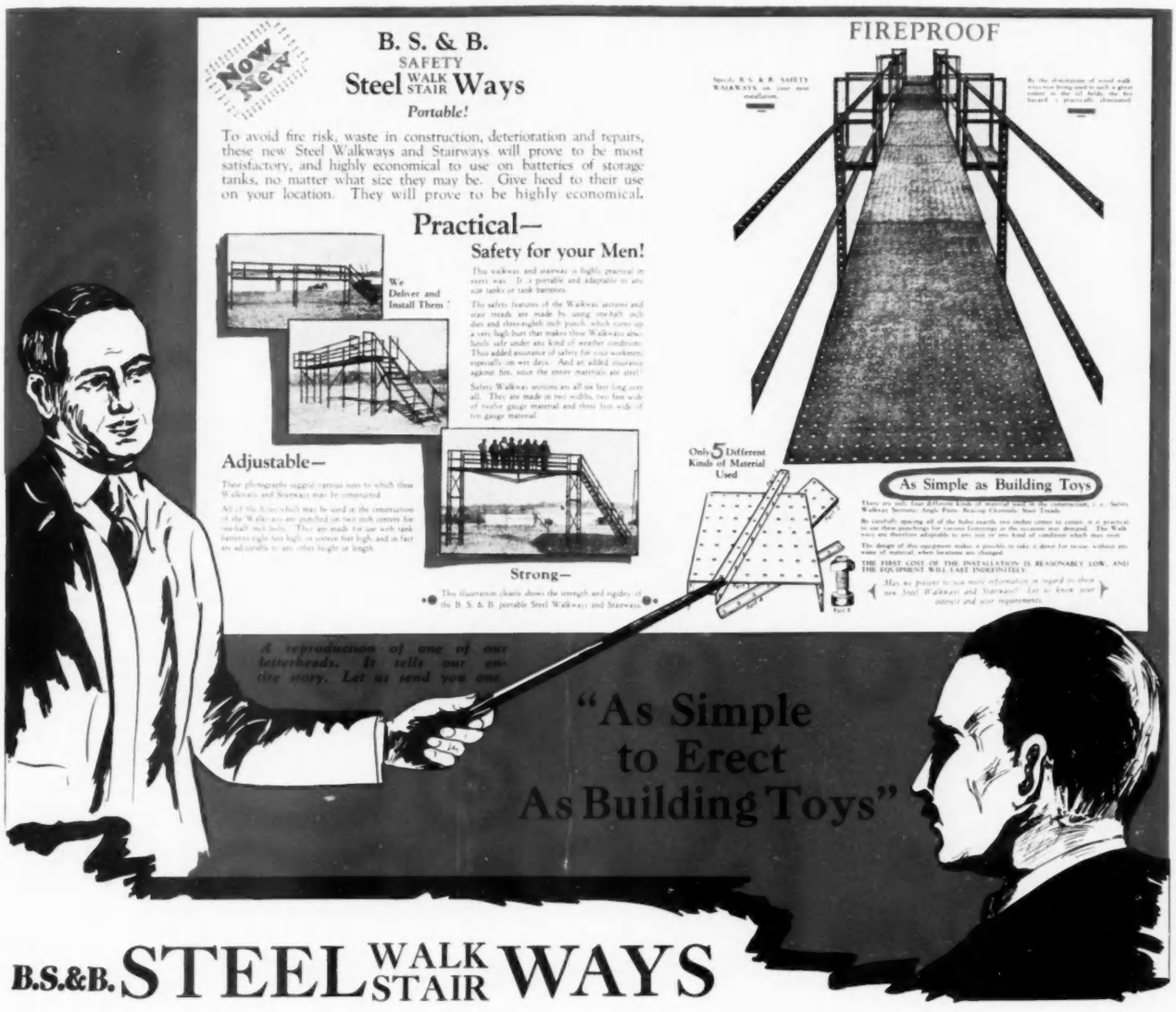
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